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The Joys of Spotlight

MACHINIST: Columnist Yuval Kossovsky takes the Tiger plunge and installs Mac OS X 10.4 on his PowerBook. His favorite feature so far? Spotlight. [@ QuickLink #5990](#)

Eye on Offshoring

IT MANAGEMENT: DSN's Scott Warren suggests that successful outsourcing always begins with an alignment of the IT strategy to the overall business strategy. [@ QuickLink #5492](#)

Employee Awareness: The Missing Link

SECURITY: Symantec's regional education director offers tips for setting up a security training program at your company. [@ QuickLink #4465](#)

Sun's Storage Outlook

STORAGE: According to columnist Steve Dugan, there are several good reasons to believe — and disbelieve — that Sun Microsystems is finally getting its act together. [@ QuickLink #5900](#)

Beyond the Supply Chain

MOBILE/WIRELESS: RFID is coming, consultant David H. Williams says, and it will have a big impact on both your business and IT infrastructure. [@ QuickLink #4436](#)

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AT DEADLINE

U.S. Cancels \$1B AT&T Telecom Pact

The U.S. Department of the Treasury has canceled a \$1 billion telecommunications contract won by AT&T Corp. last December, after protests from other bidders were supported by the Government Accountability Office (GAO). AT&T said it intends to remain "focused on how we can best meet the Treasury Department's needs."

CA Sees Profit Dip, Is Restating Results

Computer Associates International Inc. reported a steep fourth-quarter profit decline on a 7% increase in revenue. CA also said it plans to restate its financial reports from 1990 to 2005.

CAI Q4 1994 (in millions)			
Revenue	1,000	950	900
Operating Profit	100	150	180
Net Income	80	120	150

Cisco Purchases Appliance Maker

Cisco Systems Inc. has agreed to buy network appliance maker FlareNetworks Inc. in Campbell, Calif., for about \$70 million in cash. Cisco plans to use FlareNetworks' technology to provide advanced application acceleration across networks for the secure delivery of Web-based applications. The close of the deal is expected by midyear.

GAO Criticizes DHS Cybersecurity Plan

The U.S. Department of Homeland Security must do more to protect the nation's critical information infrastructure, according to a GAO report. While the department has begun efforts to fulfill its cybersecurity duties, it still must develop national cyberthreat and vulnerability assessments and contingency plans—including a plan for recovering key Internet functions, the report said.

Users Seek Tools to Ease Project Risks

Portfolio management software can help align business, IT project goals

BY HEATHER HAVENSTEIN
LAS VEGAS

ENTERPRISES are turning to project management tools to monitor risks and justify investments for application development efforts. Users at IBM's Rational Software Development Conference here said last week that tools like IBM's Rational Portfolio Manager are helping development groups better align projects with overarching business goals.

International Paper Co. turned to IBM's portfolio management product to provide visibility into its complex development pipeline, said Mark Towne, senior manager of IT solutions and services at the Stamford, Conn.-based firm. "We were flying blind — we had 600 to 700 projects going on, [but] we had no handle on [whether we could] deliver what was in the pipeline,"

“There was no process in our \$26 billion company for deciding how our IT spending was going to get done strategically.”

MARK TOWNE,
INTERNATIONAL PAPER

Towne said. "There was no process in our \$26 billion company for deciding how our IT spending was going to get done strategically."

Beginning in January, the paper company required that all new development projects be managed in the Rational system. Now International Paper has 439 proposals, 427 projects and more than 1,100 application enhancements being planned and monitored in the system, Towne said.

The company can check potential development projects against business goals earlier in the process, he said. Portfolio management "can be a weapon to drive shareholder value" by identifying and rejecting early on projects that won't provide a healthy return on investment, he added.

IBM is one of a number of vendors selling IT portfolio management tools, said David Kelly, president of Upside Research Inc. in Newton, Mass. Some suppliers, like Compuware Corp., have long sold such tools, he said. Others in this business include Borland Software Corp., Oracle Corp., Mercury Interactive Corp., Microsoft Corp. and ProSight Inc.

IBM joined the fray late last year with its acquisition of SystemsCorp ALG Ltd. and its PMO office [QuickLink 50069]. The vendor plans to update the tool at some point to provide a direct feed from development products to Portfolio Manager, said Roger Oberg, Rational's vice presi-

dent of product marketing.

Kristin Leard, an architect at Hartford Financial Services Group Inc. in Hartford, Conn., said her company is looking at the IBM tool's dashboard feature, which is designed to provide tables, maps and graphical displays of status and comparisons to detail ROI and payback of projects.

Karen Abernathy, senior technical consultant at HSBC Bank PLC in New York, said her company is eyeing Portfolio Manager to provide transparency and ensure that the company is choosing the right projects to gain business value.

Via U.S.A. Inc. is rolling out Portfolio Manager to help display the status of development progress to upper management. Visa has used Rational's RequisitePro requirements management tool to monitor the risks and progress of IT projects.

"We want [project manager] actually mitigating risk throughout the project," said Michael Levine, project manager at Foster City, Calif.-based Visa. ☎ 54679

MORE ONLINE

IBM's Rational web introduced tools that let testing and development apps with Test system management software. ibm.com/54680

New IBM Rational Head Talks Priorities

LAS VEGAS

Douglas Beahk, who joined IBM in 1974, was recently named general manager of IBM's Rational division, which makes development and testing tools. He previously served as vice president of strategy and architecture in IBM's software group. Beahk spoke with Computerworld last week during the Rational Software Development Conference here.

What will be your top priorities as the new general manager of Rational? To grow the business, the appeal of the Rational tools and methodology world-

both from a pure business standpoint in terms of revenues, but also in communities.

So far, Rational has been extremely valuable to a set of core software engineers. We want to stick with that constituency. But we also want to start appealing to broader constituencies of developers, as well as starting to play into the connections between software engineers and business analysts, and the connection between software engineers and operations and deployment issues.

I'd like to take in more of the collaboration capabilities we have in our Lotus portfolio.

What are the biggest pain points in IT development shops, and how will you build the rational edge to meet these needs? The pressure is really on return on investment. Over the years, we have disconnected ourselves as software engineers and as IT implementers. We've focused on technology, and we haven't done a good enough job of relating that technology to business needs. Giving enterprises the tools and the capabilities to be much more successful in bridging that gap between where the business wants to go is crucial to that type of transformation.

What does IBM's recent acquisition of open-source vendor Bluewin Software mean from a tools perspective? Our

acquisition of Bluewin was a sign that says "Open-source is here to stay." Open-source is an evolution of where software is going. It is something that you have to pay attention to.

What is your take on Microsoft's planned entry into Rational's traditional stronghold of team development with its Visual Studio 2000 Team System? I welcome the competition. They've got a long way to go on the team side and model-driven development side. I don't think they will ever be able to match our ability to take the model-driven design, to take the team side and map it to as strong or open or broad a middleware portfolio as what we can do. — Heather Havenstein

Q&A

HP's Unix Servers to Get Virtualization Boost

OS update will add partitioning support

BY ROBERT McMILLAN

Hewlett-Packard Co. is putting the finishing touches on an updated release of its HP-UX operating system that will add virtual partitioning capabilities to the company's Itanium-based Integrity servers.

The update will also make the virtualization technology available to users of the HP 9000 server line who want to install the latest version of HP-UX. Mary Ellen Lewandowski, director of Unix product marketing at HP, said last week that the update is due in early July as a patch to HP-UX 11i v2.

The Virtual Partitions feature, known informally as vPars, lets users install more than one copy of HP-UX on a computer. The upcoming release marks the first time vPars has been offered for the Integrity systems, which use Intel Corp.'s Itanium 2 processors.

For years, HP has included the technology in the HP 9000 machines, which are based on its own PA-RISC chips. But HP-UX 11i v2, the first version of the operating system that

offers identical feature sets for both server lines, lacked support for vPars when it was released late last year. As a result, many HP 9000 users have held off on installing the new software.

Eager Users

As far back as last August's HP World user conference, customers began asking when HP would ship the upcoming release with the virtualization capabilities, said Steven Proter, a Chicago-based HP-UX consultant. "The biggest question that came up at HP World 2004 was, 'When is vPars support going to happen?'" he said.

Though HP has faced some criticism for being slow to add features to HP-UX, Proter said he's satisfied with its approach. "HP's attitude is to be reliable, and they don't have a problem with holding a release to make sure it's quality-tested," he said. "They'd rather be late than wrong."

By enabling the use of vPars with the Integrity line, HP is delivering a "sorely needed"

capability, said Tony Iams, an analyst at Ideas International Inc. in Port Chester, N.Y. But, he added, the company still lags behind rivals such as IBM and Sun Microsystems Inc. on support for virtualization.

HP said that to address that functionality gap, it's developing more-powerful virtualiza-

tion technology that's expected to ship by year's end.

In addition to vPars, the July update to HP-UX will include a feature called Secure Resource Partitions, which will let users separate several applications on one copy of the operating system, Lewandowski said.

HP is also working to add support for Veritas Software Corp.'s clustering and advanced file-system technologies to HP-UX. That will be included in a subsequent update due sometime between August and early October, according to Lewandowski.

© 54666

McMillan writes for the *ITC News Service*.

HP Readies Last PA-RISC Chip

HEWLETT-PACKARD this week plans to formally announce the last and greatest upgrade to the HP 9000 server line plus the first models of its NonStop fault-tolerant systems that are based on Intel's Itanium 2 chips. The new PA-8000 processor for the HP 9000 will have a much larger Level 2 memory cache than its predecessor but will operate at clock speeds that are only slightly lower, according to information posted on HP's Web site. The PA-8000 will be sold in 600-MHz, 1-GHz and 1.3-GHz versions with 54MB of on-chip cache, compared with a maximum clock speed of 1.1 GHz and a 32MB cache on the exist-

ing PA-8000 processor.

The new chip is the last in the line of HP's PA-RISC processors. The company has said it will support the HP 9000 servers that use PA-RISC chips until 2011, but it has abandoned further development of the processors as part of its embrace of Itanium 2.

The PA-8000 was expected to have clock speeds in the range of 1.2 to 1.5 GHz. But Intel International analyst Rich Perbridge said it isn't surprising that HP decided to release such a modest processor update, given that the company has lost its future on Itanium-based Integrity hardware and is trying to boost the line's use.

Giving HP 9000 users a bigger CPU performance boost would "allow them to be comfortable staying on PA-RISC for a longer amount of time," Perbridge noted. "I don't think HP wants to provoke the transition."

The Itanium-based Integrity NonStop systems being announced this week were initially targeted for release late last year (QuickLink 44655). They are replacing models based on chips from MIPS Technologies Inc. in Mountain View, Calif. HP said the new servers will be capable of running one copy of its NonStop operating system across as many as 4,000 processors. Shipments are due to begin in July, with prices starting at \$400,000.

—Robert McMillan

Alcatel Adds Switches to Link Wired, Wireless LANs

BY HANNAH BERLIN

Alcatel this week will announce a second generation of wireless LAN switches, adding functionality that further extends the security and management capabilities of wired networks to WLANs.

Alcatel is adding seven switches made by Sunnyvale, Calif.-based Aruba Wireless Networks to its OmniAccess WLAN switch family, which debuted in March 2004 with a series of devices also developed by Aruba.

The new switches will give IT administrators the ability to integrate LAN-based

management tools from other vendors and Alcatel's own OmniVista software with Wi-Fi networks, said Brian Witt, director of product marketing at Paris-based Alcatel, which has U.S. headquarters in Calabasas, Calif.

New software from Alcatel will extend LAN security functions, such as attack containment capabilities, to Wi-Fi networks, Witt added. Other

security features include centralized encryption for 802.11i firewalls, with the switches assigning access rights to end users and then applying those privileges no matter where a user connects to a network.

Gordon College in Winham, Mass., plans to install one of the new switches this summer as an upgrade to its existing OmniAccess device, said Russ Leathe, director of networking and computer services at the 1,500-student college.

Leathe said he welcomes greater integration of management and security functions for the school's wired networks and Wi-Fi LANs. "We cannot afford to maintain multiple vendors' solutions and expect them to integrate," he said, noting that at colleges especially, IT

staffers are few in number and have to wear many hats.

Integrating management of wired and wireless LANs has become a priority for many network managers, noted John Miles, vice president of IT operations at Mooreville, N.C.-based Lowe's Cos., which operates about 1,100 home improvement retail stores.

"Passing [Wi-Fi] security to hardened environments is definitely needed," said Miles, who hasn't evaluated Alcatel's product offering.

Smaller vendors began offering integrated networking products three years ago, said Zeas Kervalla, an analyst at The Yankee Group in Boston. But the top vendors have started catching on more recently, he added. For example, Cisco Systems Inc. jumped on the bandwagon through its ac-

quisition of Airespace Inc. earlier this year. And Nortel Networks Ltd. last year agreed to resell WLAN switching technology from Trapeze Networks Inc. in Pleasanton, Calif.

But Richard Webb, an analyst at Infonetics Research in Boston, said the process of integrating wired and wireless network management is still in its early stages.

"The whole point is to have converged networks and perform the same set of criteria on a wired or wireless device," Webb said. "It's creating simplicity so the poor network manager isn't having to juggle two networks." © 54664

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Alcatel's OmniAccess WLAN

BRIEF

Qwest Gives Up on Purchase of MCI

Qwest Communications International Inc. has abandoned its pursuit of MCI Inc. Qwest said it was no longer in its best interest to pursue the global long-distance and data carrier. MCI said it accepted Verizon Communications Inc.'s \$26-per-share bid over a \$30-per-share proposal from Qwest in part because of Verizon's greater financial stability.

Lenovo to Build U.S. Laboratory

Chinese PC maker Lenovo Group Ltd. plans to open a development center in North Carolina to collaborate with partners—including IBM, Intel Corp., Microsoft Corp., Symantec Corp. and LANDesk Software Inc.—on new personal computing technologies. The center will be staffed by engineers, programmers and product developers from the partner companies.

PalmSource Seeks Name, CEO Resigns

PalmOne Inc. said it has agreed to pay PalmSource Inc. \$30 million for full rights to the Palm brand name, just one day after PalmSource CEO David Nagle resigned. The Palm brand name had been co-owned by the two companies since PalmSource was spun off from Palm Inc. in October 2003. Senior Vice President Patrick McGraw was named interim CEO of PalmSource.

Best Launches Hosted CRM Plan

Five years after it bought midmarket business applications vendor Best Software Inc., U.K. software maker The Sage Group PLC has changed Best's name to Sage Software. The renamed unit also revamped its portfolio in an effort to enter the hosted CRM business with SageCRM.com, a rebranded version of its Accpac accounting and sales software.

Clustering Challenges Storage Stronghold

Spread of stand-alone systems prompts efforts to improve NAS management

BY LUCAS MEARIAN

CLOUD-BASED STORAGE technology has emerged as a means for meeting a growing corporate need to better manage an ever-growing supply of network-attached storage (NAS) devices.

The technology allows IT to consolidate the management and increase the scalability of NAS, so much so that observers expect that it will one day replace the individual NAS box.

Sonia Erickson, vice president of technical operations at Kodak Easy Share Gallery, a service of Kodak Imaging Network Inc. in Emeryville, Calif., said NAS clustering technology has already saved her company hundreds of thousands of dollars in personnel costs alone.

"In terms of staffing, since we installed a NAS cluster from Iilon Systems Inc. a year and a half ago, we've

hired no additional staff," she said. "That's hundreds of thousands of dollars saved. In terms of efficiency, it takes only a day to get the systems up and running."

The Kodak unit uses clustering technology from both Iilon and Beaverton, Ore.-based PolyServe Inc. to connect hundreds of Wintel servers at Kodak that host its online digital photo image service. Erickson uses a staff of five to manage more than a petabyte of data on the servers.

Prior to installing NAS clusters, Erickson used direct-attached SCSI arrays that lacked scalability and could take up to a month and a half to get online. In contrast, the PolyServe boxes take about a week to get online, she said, and Iilon's task took about a day.

To date, most of the major storage vendors—Hewlett-Packard Co., EMC Corp., Hitachi Data Systems Corp. and

Network Appliance Inc.—have released technology that can virtualize NAS systems by pooling disk capacity behind NAS engines. All have said that they are either developing or evaluating third-party clustering technology as well. Meanwhile, start-ups Iilon, PolyServe and Panasas Inc. in Fremont, Calif., are already offering clustering software that runs across Windows and Linux.

COMPARING TECHNOLOGIES

Clustered Storage	Traditional NAS
PROS <ul style="list-style-type: none"> • Enables disparate commodity servers together • CPU workload is shared among boxes for near-linear scalability • Automatic load balancing • Reliable 	<ul style="list-style-type: none"> • Simple to install and manage • Scales well • Reliable
CONS <ul style="list-style-type: none"> • Still a niche technology • Typically limited to high-performance Linux server farms 	<ul style="list-style-type: none"> • Requires separate management of each box • If one NAS head fails, performance can be affected on the second

NetApp Unveils Midrange NAS Array

FOLLOWING a trend among storage vendors that are pushing high-end functionality into lower-end systems, Network Appliance last week introduced two midrange network-attached storage boxes that offer 50% better performance than the company's highest-end NAS boxes.

The arrays can be configured with either low-cost Serial Advanced Technology Attachment (SATA) drives or high-performance Fibre Channel disk drives, officials said.

Conduct Corp., a \$19 billion hotel franchise that owns Days Inn Worldwide Inc. and Super 8 Motels Inc., uses 20 NetApp FAS arrays with a total of 45TB of capacity. Glenn Harper, director of data

strategy at New York-based Conduent, said the company plans to add FAS3000 models during the next year.

The price/performance gains in the new midrange systems will let Conduent use fewer high-end and NetApp boxes, such as the FAS960 and FAS980 arrays, according to Harper.

The NetApp FAS3000 series arrays provide four times the capacity of previous-generation midrange arrays. The FAS3020 can scale to 50TB and the FAS3050 to 84TB.

In addition, the new systems mark the first time Sunnyvale, Calif.-based NetApp is offering a RAID-6 configuration on a NAS box. RAID-6 allows an array to

handle a failure of any two drives without loss of data or downtime.

"All the stuff you used to get on the midrange line, you're seeing that same technology ported down to the midrange," said John Kelly, vice president of technology at Jefferson Pilot Financial Insurance Co.

Kelly has NetApp FAS800 and FAS900 series boxes spread among five campuses in the U.S. He plans on purchasing FAS3000 series NAS arrays for their "flexibility and for cost control" by early next year.

Natasha Yekova, an analyst at market research company IDC, said that during 2004, major storage vendors added entry-level and midrange products that

Pushan Rinnen, an analyst at Gartner Inc. in Stamford, Conn., suggests that the clustering technology will ease management headaches better than the older virtualization technology.

Philip Rosedale, founder and chief technology officer of Linden Research Inc., a maker of online entertainment systems in San Francisco, said he has attained "extremely high I/O throughput" with a NAS cluster from Iilon that he installed about six months ago.

"We would have spent a lot more money and would have taken a lot more time with a traditional array," he said.

□ 54675

were "often accompanied by more-sophisticated software that was previously available only on high-end systems."

IDC analyst Brad Nisbet said he likes NetApp's mixed-drive offering. "The midrange is the perfect target right now," he said. "We have seen most [EMC] Clariion CX units ship with at least one shelf of ATA disks. The difference now for NetApp is that they are officially embracing ATA technology for primary storage."

Meanwhile, NetApp also targeted V-Series, formerly G-Series, virtualization gateway devices—the NetApp V3020 and V3050—based on the new FAS3000 series. The gateways can use HP, EMC or IBM disk subsystems as back-end storage.

—Lucas Mearian

BRIEFS

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Current Corp., a \$10 billion hotel franchise that owns Days Inn Worldwide Inc. and Sager & Mott Inc., uses 20 NetApp FAS3000 arrays with a total of 40TB of capacity. Glenn Harpaz, director of data

strategy at New York-based Centent, said the company plans to add FAS3000 models during the next year.

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NetApp's NetInsight, an analyst at market research company IDC, said that during 2004, major storage vendors added entry-level and midrange products that

were "often accompanied by more sophisticated software that was previously available only on high-end systems."

IC analyst David Haddad said he sees NetApp's mixed-drive offering. "The midrange is the perfect target right now," he said. "We have seen recent [EMC] Clontex CX with ship with at least one shelf of ATA data. The difference now for NetApp is that they are officially embracing ATA technology for primary storage."

Meanwhile, NetApp also debuted two V-Series, formerly B-Series, virtualization gateway devices - the NetApp V3020 and V3050 - based on the new FAS3000 series. The gateways can use HP, EMC or IBM disk subsystems as back-end storage.

- Lucas Mearin

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Microsoft Courts Mainframe Shops, Pushes Windows Use

Vendor holds first migration event; some users tout cost benefits of switch

BY CAROL RUJWA

SWAPPING OUT big-iron boxes in favor of Windows servers may not be the hottest of IT trends. But at its first Mainframe Migration Conference last week, Microsoft Corp. said it's making steady progress with its efforts to court mainframe users.

Three mainframe-to-Windows converts at the Chicago event pointed to expected cost reductions, one of the main benefits that Microsoft has been touting since it forged the Mainframe Migration Alliance with Micro Focus International Ltd. in April 2004.

Microsoft said the alliance now includes over 50 software vendors, systems integrators and other companies that offer products and services aimed at helping users migrate off mainframes. The vendor noted that the conference drew more than 200 attendees.

But Dale Vecchio, an analyst at Gartner Inc., said users are more likely to switch to Unix than Windows if they move off the mainframe. He rated Microsoft's chances of making a big impact on mainframe users at less than 20%. "It's a completely different culture," Vecchio said. "Shifting from a multitasking mainframe environment running mixed batch and online [jobs] to Windows is a big shift."

Some mainframe users were ripe to make a change, though. For example, Glen MacGregor, assistant vice president of business systems at Lombard Canada Ltd. in Toronto, said the firm's IT department proposed replacing its IBM mainframe at budget time last year. Lombard's analysis showed that IBM's z/OS operating system and various mainframe tools would cost about \$1 mil-

lion per year more than running a Windows-based environment would, he said.

So the company hired Ctrast Technology Solutions Inc. in Oakville, Ontario, to migrate 4,800 programs running on the mainframe to Windows. Ctrast CEO Andrew Wickert said 92.9% of the Cobol code remained intact when the first migration was completed using Micro Focus tools.

The company plans to do a "grand slam" conversion next March, MacGregor said. He added that Lombard expects a return on its investment in the first year after the switch.

Willem Gortier, a Paris-based program manager at AtosEuronext, a joint venture between the Euronext trading exchange and IT services firm Atos Origin SA, said the biggest costs associated with mainframes are the salaries of the workers needed to run them.

AtosEuronext's Amsterdam office recently moved six ap-

Shifting from a multitasking mainframe environment running mixed batch and online [jobs] to Windows is a big shift.

DALE VECCHIO, ANALYST,
GARTNER INC.

plications, including securities referential data administration for the Amsterdam exchange,

from a mainframe to two clustered single-processor servers running Windows. The overall migration also included a shift of its core clearing and cash trading applications to a Hewlett-Packard NonStop system in Paris and its derivatives trading systems to Sun Solaris servers in London.

The company calculated that it would have spent close to \$454,000 per month if it had kept the remaining six applications on the mainframe, Gortier said. Running them on Windows will cost \$88,000 per month, while the savings coming largely from the elimination of 30 mainframe staffers. Only six are needed to support the Windows systems, and they can also do other tasks, Gortier said. **□ 54678**

IBM Plugs Big Iron to the College Crowd

Aims to fill IT vacancies as baby boomers retire

BY THOMAS HOFFMAN

IBM is trying to convince growing numbers of young engineers that the mainframe isn't dead yet.

For example, thousands of college students have participated in an IBM-created mainframe training and curriculum program that's aimed at generating interest and building skills in the field as baby boomer IT workers near retirement age.

Since its launch two years ago, more than 130 colleges and universities worldwide have joined the IBM Academic Initiative. Under the program, IBM helps schools develop and share mainframe-related curricula, said Mike Bliss, director of eSeries technical support and marketing at IBM.

Some students say the program is awakening a previously unknown interest in mainframe technology. "I wouldn't have been interested in the mainframe [much] at all if it hadn't been exposed to" the IBM program, said Joshua Smith, a 24-year-old program-

mer/analyst at The Timken Co., a Canton, Ohio-based bearings manufacturer.

While a senior mathematics major at Canton-based Malone College in 2003, Smith took an assembler programming course offered through the IBM program. The course also contributed to his landing a job at Timken.

Prior to taking the class, said Smith, "my opinion of the mainframe was that it was a dying breed." But during the program, a trusted professor told Smith that mainframes

are still very much in use and that employers continue to recruit workers with those skills.

For instance, American Fidelity Assurance Co. still processes roughly 75% of its workload on mainframes, said John Schille, CIO at the Oklahoma City-based company. "We would be interested in supporting university education geared toward training in this environment to supplement staff replacement needs, specifically upon retirement issues," Schille said.

Preparing for the Future IBM isn't alone. Over the past few years, LexisNexis Group, a legal research provider in Dayton, Ohio, has hired a handful of entry-level IT workers with mainframe-related experience, said Allan McLaughlin, senior vice president and chief technology officer. "The potential retirement [of] some of our very specific mainframe talent keeps me up at night," he said.

IBM isn't expecting a mass exodus of mainframe talent, said Bliss. "But we do need to get some younger folks started to build those skills," particularly since it takes a few years for IT workers to embrace the

complexity of the environment," said.

According to Bliss, last October IBM set a goal of putting 20,000 people through the program by the end of 2010.

East Radd, an assistant professor of computer science at Malone College, said that the school got involved in the IBM program in early 2003 because mainframes are a "significant" part of corporate computing. "Our [computer science] program is intentionally broad instead of deep in order to expose people to a lot of things they probably haven't seen before," he added.

Chris Baran, a sophomore computer science major at Clarkson University in Potsdam, N.Y., who is interning at IBM this summer, is active in the New Hire forum, a group of IBM Academic Initiative students and customers that is trying to interest students in studying the mainframe.

The group is planning to launch a z/OS programming contest in August in which student participants will have access to mainframes at Marist College in Poughkeepsie, N.Y.

"The main focus of our contest is to get students excited about working with the mainframe," said Baran. "We're trying to get people to realize that mainframes are not dead." **□ 54679**

IBM Academic Initiative

WHAT IT IS: A program the vendor launched two years ago to encourage college students to study mainframe computing.

WHAT IT OFFERS: The initiative lets students and faculty at more than 130 universities and colleges worldwide access mainframes for lab work. IBM also works with colleges to develop curricula.

WHO'S INVOLVED: Thousands of computer science students have already participated. IBM has a goal of putting 20,000 people through the program by 2010.

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BRIEFS

Novell Posts Loss On 1% Sales Growth

Novell Inc. said significant investments made to reposition the company led to a \$15.8 million second-quarter loss. Sales rose slightly in the quarter.

NOVELL BY THE NUMBERS	
REVENUE	
Q2 '05	\$15.8M
Q2 '04	\$10.4M

Suetz Resigns From Salesforce.com Post

Patricia Suetz has resigned from Salesforce.com Inc. just over a year after the hosted CRM provider poached her from Sun Microsystems Inc. to oversee its marketing and operations. Suetz joined Salesforce.com several months before an initial public offering that left Salesforce.com with a market valuation of more than \$1 billion. She previously headed Sun's services group.

AT&T Nabs Deals Worth \$14.5M

AT&T Corp. has won two contracts totaling \$14.5 million from American Builders & Contractors Supply Co. (ABC) and Kaman Corp. Under the \$8.5 million pact with ABC, a wholesale distributor of roofing and siding materials, AT&T will provide an IP virtual private network. The \$6 million deal with Kaman, a maker of military and aerospace equipment, calls for AT&T to provide data and voice networking services.

MCI Evaluates Data Security Options

MCI Inc. is evaluating new corporate security technologies following the theft of a notebook computer containing personal information, including Social Security numbers, of about 18,500 current and former employees. The missing data was stored on a laptop that was stolen last month from a car parked in the home garage of an MCI financial analyst.

Insider Threats Mount

Security experts cite need for strong internal controls to prevent data thefts

BY JAIKUMAR VILAYAN
THE RECENT rash of data compromises at large companies, several of them caused by insiders, highlights the need for IT managers to develop tight internal controls for monitoring and enforcing compliance with corporate data-usage policies.

But the trend among companies to open up their networks to suppliers, contractors, business partners and customers is making that an increasingly difficult task to accomplish, according to security analysts.

Just last week, Bank of America Corp. disclosed that information in about 60,000 of its customers had been stolen by a New Jersey-based data-theft ring that also allegedly took electronic account records from three other banks. The ring, which police said included eight

employees from the four banks, is accused of systematically stealing account data on a total of nearly 700,000 customers (QuickLink 545421).

Both the bank thefts and a similar incident involving data aggregator ChoicePoint Inc. that came to light earlier this year were allegedly perpetrated by end users who had legitimate access to the data they took, said Michael Rasmussen, an analyst at Forrester Research Inc.

"This kind of breach poses a much bigger threat than the traditional hacker," Rasmussen said. That's especially true for large enterprises with global operations and suppliers, as well as offshore outsourcing relationships, he added.

Kim Milford, information security officer at the University of Rochester in New York, said she thinks the best way to address insider security issues is to establish an ongoing

awareness program. Such a program needs to be tailored for different groups, including IT staffers, end users, corporate executives and external partners, he said.

Also crucial is the need for administrative controls, such as job descriptions that spell out security responsibilities, acceptable data-use guidelines and confidentiality agreements, Milford said. "IT management tends to throw tech-

Mitigating Insider Security Threats

SET AND ENFORCE password and remote access policies.

USE configuration management techniques to help detect malicious code in systems.

FOLLOW procedures for system logging and monitoring and for data backup and recovery.

CREATE internal processes for reporting concerns about the behavior of employees.

SOURCE: REPORT ISSUED BY THE U.S. NIS INCIDENT RESPONSE AND CYBER CRISIS CENTER

nical controls at security exposures instead of thinking of the good old-fashioned human factors," she noted.

Companies also need to have good password, user account, and configuration management practices, as well as processes for disabling network access when employees are terminated, according to a report issued May 16 by the U.S. Secret Service and the CERT Coordination Center at Carnegie Mellon University.

In addition, formal processes are needed for handling employee grievances and monitoring reactions to events such as workers being reprimanded or passed over for promotions, the report said. Those findings are based on an investigation of 40 cases of insider activity via computer systems between 1996 and 2002.

"In 92% of the cases, a negative work-related event triggered the insider action," said Matt Doherty, a special agent in charge of the Secret Service's National Threat Assessment Center. The good news, though, is that most of the attacks were planned and not impulsive acts, which are hard to prevent, he said. **Q 54681**

Start-ups Push Apps for Tracking Corporate Ideas

BY JAIKUMAR VILAYAN
Bright Idea Inc., one of several small vendors offering software tools for managing corporate innovations, this week will introduce a hosted service designed to help users collect and prioritize new ideas and then track their development.

The Web-based service is aimed at midsize companies and divisions of larger organizations that are looking to source ideas from within groups of employees than they usually rely on, said Matthew Greeley, president of New York-based Bright Idea. Companies could use the service in product development or as part of business process improvements and cost-cutting activities, he added.

In concept, innovation management tools like the ones developed by Bright Idea are similar to product life-cycle management (PLM) applications in that they give companies a central repository for gathering and managing new ideas, said Navi Radjou, an analyst at Forrester Research Inc.

Radjou noted that the software provides workflow and analytics capabilities for identifying, categorizing and ranking good ideas and routing them to the right people. "In a sense, PLM takes over where idea management leaves off," he said, predicting that some of the companies in the market may eventually be bought by PLM vendors.

Robert Bosch Tool Corp.,

a maker of power tools in Mount Prospect, Ill., is using Bright Idea's innovation management suite to consolidate ideas from across its different product groups. The company recently conducted a two-week campaign soliciting ideas from all of its employees on how to improve one of its products, said Peter Neumann, Bosch's innovation manager.

Creating a Wish List

Bright Idea's software allowed employees to submit their ideas to a central database, where 143 responses were vetted by marketing and engineering teams and assigned ranks based on how good the ideas were. "Some of the top ideas were integrated into the marketing wish list for the next generation of the product," Neumann said.

"Idea and innovation management software tools can

have a fairly high impact," said Jonathan Spira, CEO of Basex Inc., a New York-based consulting firm. "They have not yet been widely adopted simply because they are not yet widely known."

Almost all of the vendors selling such tools are small, Radjou said. Bright Idea — which until recently was called General Ideas Inc. — is a 15-person firm, but it counts Bosch, Bristol-Myers Squibb Co., Honeywell International Inc. and Hallmark Cards Inc. among its clients. Boston-based Imaginix and Carlsbad, Calif.-based Akiva Corp. sell similar software as well.

Bright Idea already offers packaged software that starts at \$65,000 for a server license and an additional \$60,000 for integration and customization. The hosted service starts at a monthly fee of \$49 per user, Greeley said. **Q 54682**

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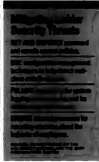
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GLOBAL

An International IT News Digest

Hitachi Replacing PCs With Secure Thin Clients

HITACHI, one of Japan's biggest electronics companies, plans to replace thousands of employee PCs in that country with its thin-client devices because of data security concerns, officials said at a news conference last week.

Over the next two years, the company will roll out 10,000 thin clients internally. IT chief Kazuo Furukawa said. "Security is becoming an extremely severe problem, and passwords are no longer enough," he said. Instead of relying on passwords, Hitachi's thin clients authenticate users via a plug-in Universal Serial Bus device that acts as a key.

The move to diskless computers follows a trial deployment of 2,000 thin clients that started in February. Eventually, Hitachi may replace the desktop and notebook PCs of virtually all of its 242,000 employees in Japan, according to Furukawa.

Hitachi also plans to sell its thin-client desktops and notebooks — which use the Windows XP Embedded

operating system and Intel Corp.'s Celeron processors — to other companies in Japan, starting in the second half of this year.

■ PAUL KALLINGER, IDS NEWS SERVICE

Pantech Gives Mobile Phones a New Shape

TOKYO

MOST CELL PHONES are shaped like candy bars or clamshells. But South Korean vendor Pantech Co. plans to change that in June when it starts selling mobile phones that slide open — with a twist.

Pantech said last week that its PT-510 and PT-K100 phones have 2-in. portrait-format color screens that slide up to reveal their keypads.

The displays can then be twisted 90 degrees, converting them to a landscape format and giving the phones a T-shape, the Seoul-based company said.



Pantech's PT-K100 cell phone

The new phones include a music player, a 2-megapixel digital camera, an electronic dictionary, a text-to-speech function and an optical character recognition scanner.

The phones will be sold only in South Korea for a retail price of about 500,250 won (\$500 U.S.). Pantech said.

■ PAUL KALLINGER, IDS NEWS SERVICE

U.K. Retailer Moves to VoIP, Converted Network

OVER THE NEXT five and a half years, London-based retailer Marks and Spencer Group PLC plans to implement a voice-over-IP (VoIP) system at its U.K. stores and a converged voice/data IP WAN for all of its international operations, the company's networking contractor disclosed earlier this month.

Cable & Wireless PLC also announced the extension of its network management contract with Marks and Spencer until the end of 2011.

The London-based international network carrier explained that it plans to continue to manage the retailer's existing voice and data networks while it works to move all of the communications traffic onto a single IP network and deploy VoIP in the U.K.

© 54642

Compiled by Mitch Betts.

Briefly Noted

France Telecom SA last week completed its buyout of Amsterdam-based network operator Equant NV. The price tag, including debt assumed by Paris-based France Telecom, was 1.26 billion euros (\$1.58 billion U.S.). Equant provides data communications services to users in 220 countries and territories [QuickLink S2914].

Swiss International Air Lines Ltd. in Basel this month announced the appointment of Frank Meyer, 54, as executive vice president and CEO, effective June 1. Meyer, previously head of systems planning at the airline, succeeds retiring CEO Robert Bertrager.

Network Healthcare Holdings Ltd. (Nashua), the largest for-profit health care operator in South Africa, will spend \$20 million (and \$15.3 million) over the next two years on an ERP system based on SAP AG's software, the vendor announced last week. Johannesburg-based Network runs 62 hospitals, 56 clinics and 80 pharmacies.

Governments Plan Data Grid Projects

BY PATRICK THORDEAU

Some governments and not-for-profit organizations such as hospitals are beginning to look at data grid technology as a means to improve services, lower operating costs and spur economic development.

Separate data grid plans involving hospitals, schools and municipal agencies in Cleveland and within Singapore's government were announced this month. Such efforts will likely take years to reach fruition. But that doesn't stop people like Vincent Miller, CIO at Cleveland-based MetroHealth System, from seeing their potential.

"Wouldn't it be neat if we could tie the ourselves together as part of a regional health organization?" Miller said. "From a conceptual perspective, it makes a lot of sense."

IBM, under the new Economic Modernization Grid initiative, has started working with a regional group called OneCleveland to develop data grids in that city. Miller said a plan for a grid connecting area hospitals is in the early discussion stages.

How They Work

A data grid is similar in concept to a computer grid. But instead of tapping CPU resources from different systems to improve computational efficiency, data grids use a middleware layer and metadata framework to give connected users a centralized view of information, no matter where it's stored on a grid.

Vendors such as Avaki Corp., which was acquired this month by Sybase Inc., offer technology for developing

data grids. But thus far, most grids have been deployed internally by businesses for pooling research or financial data. Creating a data grid that spans multiple organizations is relatively new, said Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H.

Singapore has set up a CPU grid for developers of computer games aimed at the Asian market that they can use to test and deploy their products. Now the government is working with the country's construction industry and the National University of Singapore on a multiparty effort to develop a data grid. Sun Microsystems Inc. is among the vendors involved in the project.

Khosrow Heck Yun, assistant CEO at the Infocomm Development Authority in Singapore, said last week that the

plan calls for a grid that allows government agencies, construction firms, suppliers and specialty contractors to exchange data and files.

Yun said the government wants to help construction firms become more efficient and reduce building costs. The overarching goal is to help make Singapore a more attractive

business location to multinational companies, he added.

Enabling the data sharing requires overcoming technical hurdles, such as developing security capabilities, interfaces between systems and rules that ensure regulatory compliance. But those involved say the bigger challenge is organizational.

"Many of the companies by nature don't want to collaborate," Yun said. He added that he has succeeded in getting a core group of private-sector firms to participate in the project. But doing so hasn't been easy, Yun acknowledged.

Scott Rourke, president of OneCleveland, which operates a broadband networking service for nonprofits and universities, also sees organizational issues as critical. "It's less of a technology challenge than it is coordinating the various needs and interests of the participants," he said. © 54680

Grid Ideas

IBM and OneCleveland have several potential data grids in mind, in addition to a proposed health care project.

■ **A K-12 networks** outside the grid would coordinate the sharing of information among local schools and universities.

■ **A higher-education** collaborative grid would support broad data sharing among colleges.

■ **A public information** grid would link municipal agencies.



GLOBAL

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TOKYO

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The displays can then be twisted 90 degrees, converting them to a landscape format and giving the phones a T-shape, the Seoul-based company said.

The new phones include a music player, a 2-megapixel digital camera, an electronic dictionary, a text-to-speech function and an optical character recognition scanner.

The phones will be sold only in South Korea for a retail price of about 500,250 won (\$500 U.S.), Pantech said.

■ PAUL KALLENDER, IDG NEWS SERVICE

U.K. Retailer Moves to VoIP, Extends Network

OVER THE NEXT five and a half years, London-based retailer Marks and Spencer Group PLC plans to implement a voice-over-IP (VoIP) system at its U.K. stores and a converged voice/data IP WAN for all of its international operations, the company's networking contractor disclosed earlier this month.

Cable & Wireless PLC also announced the extension of its network management contract with Marks and Spencer until the end of 2011.

The London-based international network carrier explained that it plans to continue to manage the retailer's existing voice and data networks while it works to move all of the communications traffic onto a single IP network and deploy VoIP in the U.K.

© 54642

Compiled by Mitch Betts.

Briefly Noted

France Telecom SA last week completed its buyout of Amsterdam-based network operator **Exxnet NV**. The price tag, including debt assumed by **Paris-based France Telecom**, was 1.26 billion euros (\$1.36 billion U.S.). **Exxnet** provides data and telecommunications services to some 250 schools and universities [Bridgeline 02/04].

Swire International Air Lines Ltd. in Seoul this month announced the replacement of French **Boeing 747-300** as executive vice president and COO, effective June 1. **Boyer**, previously head of systems planning at the airline, previously led **Qatar Airways**.

Network Solutions Holdings Ltd. (Netherlands), the largest U.S.-based web services company, has announced that it will acquire **Web.com**, a U.S.-based web services company, for \$1.2 billion. The acquisition will create a new company, **Network Solutions Inc.**, which will operate as a public company. The acquisition will create a new company, **Network Solutions Inc.**, which will operate as a public company.

Governments Plan Data Grid Projects

BY PATRICK THORNBURG

Some governments and not-for-profit organizations such as hospitals are beginning to look at data grid technology as a means to improve services, lower operating costs and spur economic development.

Separate data grid plans involving hospitals, schools and municipal agencies in Cleveland and within Singapore's government were announced this month. Such efforts will likely take years to reach fruition. But that doesn't stop people like Vincent Miller, CEO at Cleveland-based MetroHealth System, from seeing their potential.

"Wouldn't it be neat if we could tie ourselves together as part of a regional health organization?" Miller said. "From a conceptual perspective, it makes a lot of sense."

IBM, under the new Economic Development Grid initiative, has started working with a regional group called OneCleveland to develop data grids in that city. Miller said a plan for a grid connecting area hospitals is in the early discussion stages.

How They Work

A data grid is similar in concept to a compute grid. But instead of tapping CPU resources from different systems to improve computational efficiency, data grids use a middleware layer and metadata framework to give connected end users a centralized view of information, so matter where it's stored on a grid.

Vendors such as Avanti Corp., which was acquired this month by Sybase Inc., offer technology for developing

data grids. But thus far, most grids have been deployed internally by businesses for pooling research or financial data. Creating a data grid that spans multiple organizations is relatively new, said Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H.

Singapore has set up a CPU grid for developers of computer games aimed at the Asian market that they can use to test and deploy their products. Now the government is working with the country's construction industry and the National University of Singapore on a multiyear effort to develop a data grid. Sun Microsystems Inc. is among the vendors involved in the project.

Khoong Hock Yau, assistant CEO at the Infocomm Development Authority in Singapore, said last week that the

plan calls for a grid that allows government agencies, construction firms, suppliers and specialty contractors to exchange data and files.

Yun said the government wants to help construction firms become more efficient and reduce building costs. The overarching goal is to help make Singapore a more attractive

business location to multinational companies, he added.

Enabling the data sharing requires overcoming technical hurdles, such as developing security capabilities, interfaces between systems and rules that ensure regulatory compliance. But those involved say the bigger challenge is organizational.

"Many of the companies by nature don't want to collaborate," Yun said. He added that he has succeeded in getting a core group of private-sector firms to participate in the project. But doing so hasn't been easy, Yun acknowledged.

Scott Rountree, president of OneCleveland, which operates a broadband networking service for nonprofits and universities, also sees organizational issues as critical. "It's less of a technology challenge than it is coordinating the various needs and interests of the participants," he said. © 54680

Grid Ideas



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Blogging Software Aids Package-Tracking Project

Tools coordinate development in different countries

BY THOMAS HOFFMAN

With eCourier Ltd. developed an innovative online package-tracking system for its customers last summer, it had to coordinate work among front- and back-end developers in Italy, Germany and the U.K. But instead of using traditional project management software to monitor the project, the developers used weblogging tools from Proximor, R.I.-based Traction Software Inc. to generate project updates and provide a record of the work.

A small but growing number of IT organizations are beginning to use blogging tools for those same purposes, say industry experts. "They're really starting to pick up in popularity" among project teams, said Jack Duggal, a principal at Projectacle Group, a Simsbury, Conn.-based project management consulting firm.

The eCourier package-tracking system, supported by Global Positioning System software contained in each courier's handheld device, went live last October. It allows customers like Paul Smith, a U.K.-based clothier, to log onto eCourier's Web site to see where a courier picked up a package, where it's being dropped off and where the package is at any time.

For eCourier, a London-based express courier company, using blogging tools to help develop the Java-based mapping system made sense for several reasons, said Jay Bregman, eCourier's co-founder and technology director. "I wanted to cut costs as much as possible, so I couldn't afford to be traveling from Italy to Germany to the U.K." to manage

the project teams, he said.

At a cost of roughly \$1,000 for a five-person license, the blogging tools from Traction Software more than paid for themselves in travel savings alone, said Bregman. "And instead of playing a massive game of telephone [between developers], this gave us a source of record," he said.

Users of Traction Software's blogging tools can scroll through a list of projects and determine who posted an update to a project and when, said Jordan Frank, the vendor's vice president of marketing and business development. Project activities can be prioritized, and project managers can see when each phase has been completed.

The software can also be used like wikis, which allow

all of the information to be edited by users who have permission to do so, said Frank. Unlike blogs, wikis allow visitors to edit a Web page in addition to making their own postings.

Although Bregman raved about the low cost and benefits of using blogging software, one consultant questioned why teams wouldn't simply use free blogging software. "Why not do it for free with open-source software and get the same benefits of having a forum for discussion?" said David L. Ross, a project management consultant at David L. Ross and Associates in New York.

Duggal sees it differently. "If the software only cost them \$1,000, it's well worth the functionality and support options," he said. **CS4863**



JAY BREGMAN says blogging tools saved him travel costs.

Continued from page 1

Blogs

who heads IT at Palo Alto, Calif.-based law firm Tomlinson LLP. Scott said last week that he blogs mostly about technical issues, seeking product recommendations from other users and even writing about customer support snafus.

The blog, which he started about 18 months ago, has served as a good way to record his work and solicit advice, Scott said. There's also some personal satisfaction involved. "If I can help a couple of people with experiences that I've had, that's great," he said.

And Scott sees professional benefits to writing a blog as well. It puts his IT

knowledge and experience "out there," he noted. "It tells prospective employers what you know."

Scott may be more comfortable with blogging than are most IT managers partly because of the efforts of his well-known blogging brother, Robert Scoble, who is an employee at Microsoft Corp.

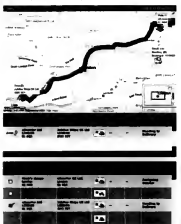
Robert Scoble writes a blog called "Scobleizer." Microsoft Geek Blogger that's ranked No. 31 on the list of the 100 most-linked blogs compiled by Technorati Inc.'s blog-tracking search engine.

Christopher Sloop, chief technology officer at AWS Convergence Technologies Inc. in Gaithersburg, Md., participates in a public group blog at his company, which develops the widely used WeatherBug soft-



Job Tracking

Use this map to monitor your status at a project.



Using eCourier, customers can track where a package is at any given time.

ware. Sloop said he thinks it's important to communicate about the software and discuss technical issues with users.

But he added that it's difficult to find the time to work on the blog. That may also be an issue for other IT managers, Sloop said. Blogging by users "may occur more on a customer support level or a programmer level," he said.

Among major vendors, IBM this month detailed a policy that encourages its 320,000 employees to blog. IBM isn't prohibiting workers from blogging about the company but said they should include their names and, when relevant, roles at IBM. The company also said bloggers need to follow its conduct code, not reveal sensitive issues and not cite customers without their approval.

Sun is hosting more than 1,000 employee blogs that are public and said it lets workers discuss any topic in them. Mi-

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David Gee, vice president of marketing for the management software business at HP, said he believes blogging will take root as user companies as they hire younger IT workers who blogged regularly in college. "It will be pushed by that generation doing what they do at home and wanting to have it in the office," he said. "We've seen history of that in the industry time and time again."

CS4865

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Go to our Web site to read about the legal liabilities of corporate blogging and the precautions companies can take.

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Continued from page 1

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Bridging the IT and Business Needs Gap

Keys to Successful Business Intelligence Deployment By Dan Vesset

The evolution of information technology (IT) is continually producing new tools for productivity enhancement. Business intelligence (BI) tools and applications, for instance, have undergone several generations of improvements, but research into the BI market suggests that considerable productivity can still be tapped by implementing currently available BI software. The business need for such tools is more pressing than ever, and so is the challenge to IT departments to get BI implementations right. ►



The Pillars of Decision-Process Automation

has shown that organizations derive two primary benefits from BI projects: productivity gains and business process enhancements. These two primary benefits can be achieved by selecting BI tools that address the following four major variables in decision making, which in turn can lead to sustained competitive advantage:

- Speed
- Insight
- Accuracy
- Relevance

Speed and accuracy of decision making are the primary contributors to increased productivity. On the other hand, advanced predictive and descriptive analytics, as manifested in the insight and relevance of decision making, contribute actively to business process enhancements.

Competitive advantage comes from the speed and accuracy of decision making, as well as from assessing the relevance of information to a decision and from gaining insight in seeking and evaluating possible decision alternatives. Because many types of decisions are recurring or repeatable (such as pricing, extending credit or allocating resources), decision-making processes exist that are amenable to automation.

However, decision process automation is achievable only when all four variables outlined above are used in software architectures that support decision making.

IDC defines business intelligence software as the software that supports speed, accuracy, relevance and insight in decision making. BI, in turn, is a segment of the broader business analytics market that includes tools for data integration, data warehouse management, query and reporting, data mining, technical data analysis, and spatial information management as well as prepackaged applications for customer relationship management (CRM); financial, business performance management; supply chain; and operational analytics.



The need for these software solutions has never been greater. For instance, data published last year by the U.S. Department of Labor has shown a slowdown in productivity, which suggests that perhaps the low-hanging fruit of the excesses of the late 1990s has been picked, and therefore businesses need to find new ways to increase productivity if they hope to gain competitive advantage.

A new investment cycle in productivity-enhancing tools appears imminent, and current investment trends in BI software support this conclusion. In 2004, the BI tools market experienced better-than-expected performance, growing by 9.5% to reach \$4.25 billion in worldwide software revenue. IDC forecasts a 2004–2009 compound annual growth rate (CAGR) of 6.0%, which reflects some changes in the underlying market, such as a shift in software sales from BI tools to packaged analytic applications and database-embedded BI components. IDC estimates that the broader business analytics market reached \$14.5 billion in 2004.

Critical Misalignment

Despite a healthy adoption rate, however, the deployment of software to support decision-making processes continues to lag significantly behind the money that

companies spend on software to process transactions. IDC research shows that for every dollar spent on transaction processing applications or capturing and getting data into databases, only \$0.25 is spent on getting the data out for business analytics to support decision-making and statutory reporting processes.

The result is a critical misalignment between business needs and the information technology intended to serve those needs. For example, a recent IDC survey revealed that only about 10% of business managers feel very confident with the statement that the reports developed in their organizations deliver relevant information to the right people at the right time. About 40% of the managers surveyed reported feeling not at all confident or only somewhat confident.

Although the misalignment between IT and business is ultimately a business problem, IT managers must address several distinct IT challenges to successfully implement and support BI:

► **Defining system requirements.** BI implementation is often a vague and iterative process because of the difficulty in deter-

mining in advance all the information forms that users want—the type of reports or the alerts for certain kinds of information. Usually the BI system is replacing a relatively manual data-tracking process that may employ an Excel spreadsheet, for example. So after the new BI system is online, users begin asking for more—more data sources, more different kinds of reports, more key performance indicators (KPIs). Each of these requests needs to go through the IT department, and while some are relatively easy to implement, others take more time and testing. Unlike other IT systems, such as financial applications that remain comparatively static following implementation, BI systems are dynamic and continually evolving.

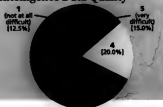
► **Transforming disparate data into a single model.** All the information that populates user “dashboards” and “scorecards”—the BI interfaces—must be brought in from different systems and molded into a single data model. This is a complex data transformation task. For example, IDC has found that in BI projects for CRM systems, 70% of the work is just around sourcing and mapping the data—before the information can be accessed and distributed. A related issue is

Challenge of Maintaining Business Intelligence Data Quality

- Using a 5-point scale, where 5 is “very difficult” and 1 is “not at all difficult,” please rate the difficulty of maintaining business intelligence data quality.

Nov 09

Source: IDC, 2009



managers spend on segments. For the same transactions, HRG is not reporting that the company is spending more supporting an economic application or capturing and storing data in an enterprise database. Only SAP is spending, capturing the data and for business analysis to help support decision-making and statistical reporting processes.

The result is a critical misalignment between business needs and the information technology intended to serve those needs. For example, a recent HRG survey revealed that only about 10% of business executives feel very confident with the statement that the reports developed in their company do not deliver irrelevant information to the right people at the right time. About 40% of the managers surveyed reported feeling not at all confident or only somewhat confident.

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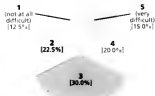
business information needs for individual departments, divisions, or the entire organization. Companies often do not have a clear idea of what they really want, and they may not know what they need. The BI implementation process is gradual, iterative and non-linear process. Therefore, application development for a company. Secondly, the BI system is customer-specific and addressing their information needs. The system is difficult to implement, monitor and performance applications (KPIs). Each of these fundamental challenges threaten the BI program, and while some are relatively easy to overcome, the biggest is taking time to get together. Unlike other IT systems, such as training all applications that run on computers, which follow the following business-driven BI implementation dynamic and structured process:

Transforming disparate data into a single model

All the information that populates user dashboards and scorecards, the BI interfaces, must be brought in from different systems and modeled into a single data model. This is a complex data transformation task. For example, HRG has found that in BI projects for CRM systems, 70% of the work is just around sourcing and mapping the data before the information can be accessed and distributed. A related issue is

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n=40



Source: IDC 2005

This article is abstracted from a forthcoming white paper by IDC, commissioned by Oracle and titled "The State of Business Analytics—Best Practices, Benefits, Challenges and Shortcomings."

To read the entire white paper, log on to www.idgpartners.com/oracle/print

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maintaining data quality, which according to a recent IDC survey, is an ongoing challenge. A full 35% of survey respondents said that data quality maintenance is either "very difficult" or "difficult," versus only 12.5% who answered "not at all difficult" (see chart, page 3).

► **Managing user expectation/experience.** Users often expect to get a lot of data immediately and to have the system solve tough business problems. As described earlier, BI system development is inherently iterative, complex, and ongoing. Furthermore, while BI is being extended to address decision-making processes, the types of decisions for which the technology is best suited tend to be operational decisions that are foreseeable and repeatable—decisions that employees have to make on a regular basis. BI will not necessarily hand users their next big idea, such as the creation of a new product. Moreover, although 70% of respondents to a recent IDC survey said that existing BI systems let them effectively make operational decisions, 30% of organizations still have systems that don't allow for effective operational decisions.

► **Guaranteeing system availability.** BI is not just for executives anymore. Increasing numbers of line-of-business managers and lower-level employees are accessing BI systems to make important decisions as part of their normal duties. BI usage is, in effect, reflecting a larger business trend toward decentralization, the flattening of organizational hierarchies, and increased decision-making responsibility for front-line workers. As BI follows this trend, it becomes more operational, and while BI isn't yet on a par with transaction processing systems, it's clearly getting there. Downtime on transaction processing systems is intolerable, and it's increasingly less tolerated on BI systems. This indicates that BI has become truly integrated in the business processes of many companies. IT managers can expect this trend to grow with the advent of real-time information delivery; as BI information becomes more time-sensitive, system downtime becomes a bigger problem. ♦

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being **PAID**
what you're
WORTH?



1 OF 10

COMPUTERWORLD

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2005

DON TENNANT

Device-driven

AT A SEMINAR LAST WEEK in San Francisco on the impact of mobility on business, I asked for a show of hands to see how many of the attendees' companies have a policy governing the use of personal devices. Of the roughly 50 people in the audience, four raised their hands.

No one in the room, including me, was surprised. The lack of such policies in corporations is well documented. But what did surprise me was the depth and universality of frustration that IT pros are feeling with respect to trying to manage mobile devices.

One CIO talked about how he's bummed that vendors haven't done a better job of standardizing cell phone and handheld wares; another wondered how to devise a sustainable support model. And then there's the issue they're all fretting over, probably more than any other: security. Between lost data and the proliferation of spam and viruses targeting these devices, the threat seems to be overwhelming many CIOs.

The hand-wringing over security is only going to get worse, because personal devices are only going to get more ubiquitous. And as if cell phones and handhelds weren't enough to contend with, MP3 players are quickly being added to the cache of productivity arms in your users' arsenals.

That disquieting fact was underscored last week when Apple Computer's Steve Jobs said his company will support and organize podcasts—downloadable audio files, typically of voice programming—in the next versions of its iTunes and iPod software. The announcement didn't raise too many security alarms, but think about it. Podcasting is a convenient, inexpensive, reliable means of

disseminating information to a global workforce. It's already gaining popularity as a vehicle for sharing the proceedings of meetings and conferences, and it's easy to imagine how it might be used for corporate training and vertical applications like distributing lecture materials in the education sector.

What that means is

that MP3 players will eventually be standard equipment for your users. And when that time comes, the capacity for corporate data loss will be almost incomprehensible. Your networks and devices might be bullet-proof, but there will be nothing to mitigate the insider security threat when your organization is inundated

with what are essentially portable hard drives with exponentially growing storage capacities.

Fortunately, for many organizations there will be a silver lining in all this, because they'll no longer have to deal with the headache of supporting a PC on every desktop. Concern about the damage these devices can do will be the catalyst that finally makes server-based, thin-client computing compelling enough for many CIOs to bite the bullet and make the switch.

Just last week, Hitachi cited security as the main reason for a plan to replace 16,000 internal PCs with thin clients over the next two years [QuickLink a5890]. True, Hitachi is in the business of selling thin-client systems, and its move is similar to what Sun Microsystems has done with the internal adoption of its Sun Ray thin clients.

There's unquestionably a marketing element involved, but it would be shortsighted to chalk the strategies up to gimmickery. These guys are on to something. ☎ 54881

Don Tennant



MICHAEL GARTENBERG

There's a Scarcity of Great Stuff

WHERE HAS all the good stuff gone?

When Jef Raskin passed away not too long ago, I started wondering about this. As a longtime champion of simpler computing interfaces, Raskin was behind the original concept of the Macintosh, before Steve Jobs took over the project. His focus was on simplicity and easier interaction between man and machine.

Over the years, other great designers have created some truly innovative applications and helped drive productivity forward. Sadly, many of these technologies have faded by the wayside, and along with them, a lot of great features in human/computer interaction have been lost. Here are some of the things I miss and some of the features that made them not only indispensable but also classics that have no peers among today's personal productivity tools. It's time to look back to drive things forward.

Remember Agenda from Lotus? This personal information manager offered a dazzling array of flexible features and views and could understand natural commands such as "Meet with Joe next Thursday at 1."

Lotus also created Improv, a next-generation spreadsheet. Introduced as a showcase piece of software for the NeXT platform (and later ported to Windows), it was as different from anything that had come before it as spreadsheets were from paper ledgers. The program was object-driven, and it was easy even for novices to create and restructure data on the fly. Microsoft's answer was to incorporate pivot tables into Excel, but it was hardly the same thing. Now the spreadsheet languishes, and Excel has hardly changed in years.

Other productivity gems? Page-



Maker let anyone do professional paste-up work without intensive knowledge of graphic arts. The simple metaphor for layout had no equal. Today's programs are all either too simplistic in functionality or too arcane for mere mortals.

It wasn't just applications. Operating systems were moving forward at one point before stagnation set in. When Apple introduced the Newton technology, it seemed revolutionary. There was no file system, and all complexity was hidden from the user. The default state of all information was to be saved permanently. I recently dug out an old Newton from 1996 or so and popped it in a set of AA batteries, and, announced by a little trill, there were all my applications and data, ready and waiting for me. Try that with an old handheld and see what happens.

Hardware has also taken a step backward. The HP i900s, for example, was a nearly perfect mobile computing device. It had a usable mobile keyboard and a real embedded numeric keypad, so taking down phone numbers from voice mail was a snap. It ran forever on two AA batteries and even had a PC Card slot. If it could get mine to do wireless e-mail and sync with Outlook, I'd go back to it in a heartbeat.

It's time for some innovation. I'm tired of mediocrity and complexity in the hardware and software I use. I'm tired of Linux distributions masquerading as innovation by trying to mimic Windows and Office (with all of their flaws, I might add). How about bringing back some of the older concepts, updated for the 21st century? I'm writing with my credit card at the ready, and I suspect others are, too.

What classic programs and features do you miss? Drop me a line and let me know. ☐ 64487

JOHN D. HALAMKA

Health Care Needs a DNS For Patients

A PATIENT WITH an allergy to aspirin has a heart attack while driving, loses consciousness and crashes into a telephone pole. In the emergency department, the first medication likely to be given to him is therapy for the heart attack—*aspirin*. Adding an allergic reaction to the ex-

isting heart attack and trauma results in shock, and the patient dies.

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A better way to interconnect health care is to leave all the data, without a national identifier, where it lives today in doctors' offices, hospitals, labs and pharmacies, but connect it with the kind of decentralized, federated but coordinated architecture that drives the Web. When you want to buy a book from Amazon.com, it's unlikely that you type the IP address, <http://207.171.25.29>.



Instead, you type www.amazon.com, and the Internet's Domain Name System connects you to the right Web server.

Imagine a DNS for patients that functions in a similar way. When a patient consented for his identity to be recorded, his name, sex, date of birth, ZIP code and medical record number (but not clinical information) would be securely transmitted to a medical-grade patient DNS. A clinician needing access to medical records could, with the patient's consent, query the DNS by providing demographic information and then obtain a list of the institutions the patient had visited as well

as his medical record numbers. He wouldn't have to know the numbers—the rough equivalent of Amazon's IP address—*ahead of time*.

In the short term, this patient DNS would provide the clinician with enough information to contact other institutions that have treated the patient and request medical records via fax or phone. Over the next few years, as hospitals set data-exchange standards and clinician offices implement interoperable electronic health records, this pa-

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☐ 64480

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READERS' LETTERS

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THE BEARS OF BOUNTY about blade scanner technology were most probably planted by those in the industry who don't have viable solutions [Edgy About Blades, QuickLink 53655]. I recall some remarks by Michael Dell a year or so ago that warned about heat buildup. My guess is that at that time, Dell hadn't figured it out yet.

We are happy IBM BladeCenter users with almost a full rack. We ran Novell, Windows and Linux via VMware on the blades and Fire Channel them to a Shark and an IBM LTO. We have never had a problem with the blades or with the technology involved in the product design.

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For more letters on these and other topics, go to www.computerworld.com/letters

DON TEUNANT

Device-driven

AT A SEMINAR LAST WEEK in San Francisco on the impact of mobility on business, I asked for a show of hands to see how many of the attendees' companies have a policy governing the use of personal devices. Of the roughly 50 people in the audience, four raised their hands.

No one in the room, including me, was surprised. The lack of such policies in corporations is well documented. But what did surprise me was the depth and universality of frustration that IT pros are feeling with respect to trying to manage mobile devices.

One CIO talked about how he's bummed that vendors haven't done a better job of standardizing cell phone and handheld wares, another wondered how to devise a sustainable support model. And then there's the issue they're all fretting over: probably more than any other security risk. Between lost data and the proliferation of spam and viruses targeting these devices, the threat seems to be overwhelming many CIOs.

The hand-wringing over security is only going to get worse, because personal devices are only going to get more ubiquitous. And as cell phones and handhelds weren't enough to contend with, MP3 players are quickly being added to the cache of productivity arms in your users' arsenal.

That disquieting fact was underscored last week when Apple Computer's Steve Jobs said his company will support and organize podcasts — downloadable audio files, typically of voice programming — in the next versions of its iTunes and iPod software. The announcement didn't raise too many security alarms, but think about it: Podcasting is a convenient, inexpensive, reliable means of



Don Teunant is editor in chief of Computerworld. You can contact him at don_teunant@computerworld.com.

disseminating information to a global workforce. It's already gaining popularity as a vehicle for sharing the proceedings of meetings and conferences, and it's easy to imagine how it might be used for corporate training and vertical applications like distributing lecture materials in the education sector.

What that means is that MP3 players will eventually be standard equipment for your users. And when that time comes, the capacity for corporate data loss will be almost incomprehensible. Your networks and devices might be bulletproof, but there will be nothing to mitigate the insider security threat when your organization is forced

ed with what are essentially portable hard drives with exponentially growing storage capacities.

Fortunately, for many organizations there will be a silver lining in all this. Because they'll no longer have to deal with the headache of supporting a PC on every desktop, IT concerns about the damage these devices can do will be the catalyst that finally makes server-based, thin-client computing compelling enough for many CIOs to bite the bullet and make the switch.

Just last week, Hitachi cited security as the main reason for a plan to replace its 800 million PCs with thin clients over the next two years [Quick! Ink #5890]. True, Hitachi is in the business of selling thin-client systems, and its move is similar to what Sun Microsystems has done with the internal adoption of its Sun Ray thin clients.

There's unquestionably a marketing element involved, but it would be shortsighted to chalk the strategies up to gimmicks. These guys are on to something. ☎ 54651

Don Teunant



There's a Scarcity of Great Stuff

WHETHER HAS all the good stuff gone?

When Jef Raskin passed away not too long ago, I started wondering about this. Is a longtime champion of simpler computing interfaces, Raskin was behind the original concept of the Macintosh. Is there Steve Jobs' look over the project? His focus was on simplicity and easier interaction between man and machine.

Over the years, other great designers have created some truly innovative applications and helped drive productivity forward. Sadly, many of these technologies have fallen by the wayside, and along with them, a lot of great features in human-computer interaction have been lost. Here are some of the things I miss—and some of the features that made them not only indispensable, but also classics that have no peers among today's personal productivity tools. It's time to look back to drive things forward.

Remember Agenda from Lotus? This personal information manager offered a dazzling array of flexible features and views and could understand natural commands such as "Meet with Joe next Thursday at 12."

Lotus also created Improv, a next-generation spreadsheet. Introduced as a showcase piece of software for the NeXT platform (and later ported to Windows), it was as different from anything that had come before it as spreadsheets were from paper ledgers. The program was object-driven, and it was easy even for novices to create and restructure data on the fly. Microsoft's answer was to incorporate pivot tables into Excel, but it was hardly the same thing. Now the spreadsheet languishes, and Excel has hardly changed in years.

Other productivity greats? Page-



Michael Santoro is vice president and research director for the Personal Technology & Access and Content Research group at Jupiter Research in New York. Contact him at santoro@jpr.com. His weblog and RSS feed are at <http://weblogs.jupiterresearch.com/analysis/santoro.asp>.

Maker let anyone do professional paste-up work without intensive knowledge of graphic arts. The simple metaphor for layout had no equal. Today's programs are all either too simplistic in functionality or too arcane for mere mortals.

It wasn't just applications. Operating systems were moving forward at one point before stagnation set in. When Apple introduced the Newton technology, it seemed revolutionary. There was no file system, and all complexity was hidden from the user. The default state for all information was to be saved permanently. I recently dug out an old Newton from 1996 or so and popped in a set of AA batteries, and, announced by a little trill, there were all my applications and data, ready and waiting for me. Try that with an old handheld and see what happens.

Hardware has also taken a step backward. The HP 1000s, for example, was a nearly perfect mobile computing device. It had a usable mobile keyboard and a real embedded numeric keypad, so taking down phone numbers from voice mail was a snap. It ran forever on two AA batteries and even had a PC Card slot. If I could get mine to do wireless e-mail and sync with Outlook, I'd go back to it in a heartbeat.

It's time for some innovation. I'm tired of mediocrity and complexity in the hardware and software I use. I'm tired of Linux distributions masquerading as innovation by trying to mimic Windows and Office (with all of their flaws, I might add). How about bringing back some of the older concepts, updated for the 21st century? I'm waiting with my credit card at the ready, and I suspect others are, too.

What classic programs and features do you miss? Drop me a line and let me know. **Q 54487**

OPINION COLUMN

Health Care Needs a DNS For Patients

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Q 54480

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All Together Now

Systems integrators spend their professional lives making technologies interoperate. Here are the steps they say are key to planning and executing successful integration projects. **Page 20**



QUICKSTUDY Supercomputers

When is a computer a supercomputer? In the end, it's all about performance. **Page 30**

SECURITY MANAGER'S JOURNAL

More Than a Token Overhaul of the VPN

Getting approval to deploy two-factor authentication was only half the battle. Now Matthias Thurman must redeploy the VPN infrastructure to make it work. **Page 32**

Driven by million-dollar fines, businesses are using technology to comply with legal and regulatory requirements - and regain control over electronic records.
By Robert L. Mitchell

A FEW YEARS AGO, most companies didn't give much thought to electronic records management. But a spate of scandals, lawsuits and new regulations has changed all that.

Despite renewed attention to e-records management, however, many organizations still lack automated systems to efficiently process all e-records requested during a legal discovery proceeding. Yet retrieving such records — and the penalties for noncompliance — can cost businesses millions of dollars.

"E-litigation is an extremely expensive endeavor," says Jane Connerton, corporate records manager at The Procter & Gamble Co. in Cincinnati. While P&G has a records retention policy, finding and retrieving records during legal discovery can be a daunting challenge — especially when the records are on backup tapes.

"We had a case that, after a week's worth of discovery, we calculated that backup tape suspension and legal review of the e-records was going to cost us a million dollars," Connerton says. And, she adds, such requests aren't uncommon for businesses of P&G's size.

In response, companies are turning to records and content management systems to automate the processes for identifying and categorizing records of

all types, establishing and enforcing retention schedules, and maintaining accessibility to those records.

"You're trying to identify what has become a record, associate a rule with it and blow it away when it's no longer needed," says Julie Gable, principal of Gable Consulting in Philadelphia.

Companies must also comply with myriad local and federal regulations that vary by industry. For example, SEC Rule 17 requires that brokerages store records in a non-rewritable, nonerasable format. Sarbanes-Oxley Act Section 807 requires some records to be held for seven years. Other requirements are triggered by events, such as health care regulations that require records to be kept for a certain period after a patient's death.

The Elusive E-record

Records serve as evidence, says Gable. "They accrue to business processes, show what transpired during transactions, confirm rights and obligations, and provide motive for corporate action." What constitutes a record is determined by business, regulatory and legal requirements. Those definitions and policies are typically set by a corporate records manager, but IT must manage those records.

Today, records take many forms.

While printed documents may be collected in file cabinets, e-records are scattered across a wide range of repositories. They may be embedded in e-mail, instant messages and other unstructured data that account for up to 40% of business data flows, according to the Storage Networking Industry Association (SNIA).



RECORD RISKS

It isn't the biggest issue, says Gary Birtley, IT manager at the IT compliance practice at Kohn Consulting Inc. in Highland Park, Ill.

In 2004, for example, Birtley of America's Securities LLC was fined \$30 million and Philip Morris USA Inc. and Allura Care Inc. \$25 million for failing to produce e-mail records in a reasonable time frame and failing to preserve documents after being told to do so. But despite such penalties, most of organizations still don't have an e-records policy, for legal hold orders, let alone the tools to enforce it, according to a survey by the Association of Records Managers and Administrators (ARMA) and the Association of Information and Image Management.

The typical IT strategy of saving

everything that isn't too big, says Jerry Mahana, record management consultant in Danville, Calif. "All non-record material should be destroyed as soon as is practical," he says. "If you have things you didn't need to retain, they're going to take time, money in your system. Those documents could be used to the detriment of the company in legal proceedings," he says.

But more important, they add to the cost of discovery, says Heidi Pakard, president of record information management firm Systems Vendor INS Systems Inc. in Palo Alto, Calif. "If there's a legal hold, all the information you have, whether a business record or not, is discoverable," she says.

Once a policy is in place for deleting end-of-life records, halting those processes in response to a legal hold order is difficult. Many organizations lack adequate technology and processes to deal with the problem, Cable notes.

IT needs to work closely with records managers, says ARMA President Dave McDermott. As assistant records manager at aribusiness conglomerate IR Simplot Co. in Boise, Idaho, McDermott worked with his IT group to develop a retention requirement for all backups.

Because records may be needed in the future, eliminating or archiving based on activity level or disk space usage doesn't work, says Michael Peterson, program director of the SNIA Data Management Forum.

At a minimum, good records management practices require interactivity, notes among IT, the corporate records manager, the business units that own the data and the legal department. Today, part of the problem is ignorance of records requirements within some IT organizations, says PSCG's Connerton.

Evolving Tools

RIM software helps to define and categorize records and set retention policies. But the programs, originally created to manage paper records, are still evolving to handle e-records in places ranging from the ERP system to e-mail. To deal with this challenge, most products copy files and relate metadata into a central repository. Records management tools also integrate with desktop productivity software, e-mail programs and archiving software to identify records and establish an audit trail for compliance purposes.

RIM has caught the attention of enterprise cost-cutting programs like EMC's software to index such as FileNet Corp.'s Documentum Inc., and IBM's iSeries Group. For RIM products and inte-



Here are a few examples of organizations that have paid a price for inadequate records management.

grated them into their own suites.

But Connerton says centralization is no panacea. "In a major corporation, you're never going to have a single repository for all records," she says. While PSCG's seven divisions do use RIM and ECM tools for some records, that's not enough. "What we've done is mapped out where the records are, who owns them from an IT perspective and how we can get them to facilitate the discovery process," she says.

At FirstEnergy Corp. in Akron, Ohio, one-third of the company's records are in its ERP system and can be easily copied into a central repository. Senior IT systems analyst Teresa Straight says she's trying to figure out how to connect a FileNet system with SAP in order to manage records in the company's data warehouses.

Most RIM products still rely on manual processes or prompt the end user to identify, classify and check in records. Products such as FileNet Corp.'s Records Manager are at the forefront of a trend to automate that. With e-mail volume exploding, automated identification and classification of records is crucial, says Greg Rhinehart, director for compliance products and solutions at Vista Mesa, Calif.-based LitNet. "If you think you'll get 10,000 users to manually declare and classify records, you're wrong. Enforce your policy at the technology layer and at the user layer," he says.

Connerton says she would trust an automated categorization system, although she agrees with "You can go part of the way there with real

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At PSCG, employees attend a 15-minute training session and an annual refresher. They are also required to review their files annually to comply with PSCG's retention schedules, Connerton says.

Records management best practices must be infused throughout the IT systems that create or touch records, practitioners say. Connerton is working with IT to integrate e-records guidelines into the PSCG's information systems. With business units ranging from pharmaceuticals to dog food producers, that's not an easy task.

"We can't impose them immediately because there are legacy systems that are too expensive to retrofit," explains Connerton. It will be five to seven years before every document repository is in compliance, she says.

Larry Hawkins, director of records and information compliance at FirstEnergy, says he collaborates with IT on new system designs. "We don't procure technology without a thorough review," he says. **□ 54300**

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Corporate records manager at Procter & Gamble recently oversaw the establishment of e-records guidelines and is working with IT to implement them across all data repositories. She offers these six tips for IT organizations:

Know the record contents of data, and manage the life cycle accordingly, as reported to managing IT based on culture or location. (For example, 600GB on Unix Server 3.)

Understand how the record will be retrieved and used by primary users, and design the system to meet those specifications.

Work with your legal or regulatory experts and hence what laws or regulations apply to the records in your system.

Maintain all the metadata, too, in order to adequately define the record.

Don't keep backup data any longer than necessary to meet operational needs, as advised by the IT department.

When erasing a record, simply deleting the file isn't good enough.

Don't delete records until you have a backup.

"E-mail is the biggest issue we see," says Barclay T. Blair, director of the IT compliance practice at Kahn Consulting Inc. in Highland Park, Ill.

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WHEN RECORD-KEEPING GOES WRONG

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Records management is becoming a big part of information life-cycle management. Qcwiklink.040909

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SIX TIPS FOR HANDLING E-RECORDS

Jane Connetton, corporate records manager at Pricer & Gable, recently oversaw the establishment of e-records guidelines and is working with IT to implement them across all data repositories. She offers these six tips for IT organizations:

■ **Know the record contents of data, and manage the file cycle accordingly.** As opposed to managing it based on volume or location (for example, 60GB on Unix Server 3).

■ **Understand how the record will be retrieved and used by primary users, and design the system to meet those specifications.**

■ **Work with your legal or regulatory experts and know what laws or regulations apply to the records in your system.**

■ **When preserving a record, maintain all the metadata, too. It is critical to adequately define the context.**

■ **Don't keep backup data any longer than necessary to meet operational needs, and never longer than the record itself.**

■ **When saving a record, simply deleting the file isn't good enough. Use a process or technology that completely obliterates the data so it can't be retrieved later.**



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All Together Now



Systems integrators earn their living making technologies work together. Here, some veterans offer advice on planning and executing successful integration projects. **BY DREW ROBB**

TOO OFTEN, promising integration projects wind up as expensive flops. The FBI's failed four-year, \$170 million Virtual Case File project is only the latest example to make the news. On May 24, FBI

Director Robert Mueller reported to Congress that the first phase of the replacement system won't be ready until 2006, at a cost yet to be announced.

While few integration projects are that costly in pure dollar terms, they can still make or break an organization. With the increasing commoditization of both hardware and software, technology alone is no longer the key. Rather, business success hinges on how well those products are integrated to advance business goals.

"The applications themselves are not the differentiator," says John Schmidt, president of the Integration Consortium, an industry group working to establish standards, guidelines and best practices for integration projects. "It's how well you can glue them

all together and connect with customers and suppliers."

Schmidt has worked in the IT industry for 27 years and has spent the past 15 helping major North American and European retail, financial and telecommunications corporations integrate their systems. Computerworld asked Schmidt and other experienced systems integrators for advice that could help IT managers with their integration projects.

Getting Agreement

Systems integration is often thought to refer to the effort to make systems work together harmoniously. Perhaps less understood, however, is that those systems must also be closely aligned with the overall business strategy.

"The most critical phase of the project includes really understanding its purpose before it starts and interviewing all stakeholders to find out their definition of what will make the project successful," says Bob Woodruff, CEO of project management consulting firm Robbins-Gioia LLC in Alexandria, Va.

Unfortunately, few companies appear to heed this advice. Woodruff has worked in project management for 20 years and says that people with the most clout in an organization tend to get their projects funded, whether or not they are the most important projects for the company as a whole. This can wreak havoc for the IT staff.

"These sponsors are typically unaware of the impact caused by inserting new technology into an already existing environment," he says. "This leaves the IT manager in the unenviable position of trying to integrate systems that just don't work well together."

For example, Woodruff is overseeing the update of his own firm's enterprise architecture. Systems that are based on Oracle or SQL databases are simple to integrate — just write some SQL queries, pull the data out, reformat it and dump it into the other system. Systems that export the data into an Excel spreadsheet require a bit more work. Even worse are the proprietary, nondatabase systems, some of which require manual re-

entry of data into the new systems.

"Some pieces we may not convert because of the cost involved, the timing, the real value to the company," Woodruff says. "If we are going to replace it in a year or two, we will just leave it."

He advises avoiding projects without sufficient executive sponsorship or funding, pet projects that provide only short-term gain and projects that have ill-defined requirements.

To be fair, though, IT can also be guilty of failing to coordinate integration projects. Michael Kubbock, CEO of K-Bear Corp., a business strategy consulting firm in Calgary, Alberta, has seen cases where IT departments bought middleware licenses, assembled project teams and created budgets before consulting with the business units.

"On one case, it took another three months to bring the business on board," Kubbock says. "That happens day-to-day in the market."

Assembling the Team

After hashing out the project scope and purpose, it's time to assemble the integration team. That can involve a mix of internal and external resources.

"IT managers can find the expertise they need in several places," says Liz Mann, managing director of Mycroft Inc., an identity management and security firm in New York. "They can find it within their own organization, they can utilize product-specific expertise from the vendors, and they can use expertise from integration consulting companies."

Major projects require expertise in a broad array of technologies.

"There have been many waves of application technology over the years that seem to move in regular seven-year cycles — for example, mainframes to mini- to microcomputers, or monolithic to client/server to Web service applications," Schmidt says. "The shift from one wave to the next is neither instantaneous nor necessarily economically justified, so an integration methodology must deal with three to four generations of technology at once."

While the right mix of technical skills is critical, integration projects can be scuttled by the "religious" wars surrounding some technologies.

"You should stay agnostic as applied to technology and stay away from those who are devout," says Gerard McGowan, vice president of technology and services at Innovativ Inc., an integrator in Edison, N.J.

Schmidt says this also applies when

selecting a consultant or vendor to join the project. When someone tries to present a single solution, such as implementing a service-oriented architecture, he shows that person the door. "It is not that a service-oriented architecture is bad, but it is presented as if it will solve all your integration problems," he explains. "There are no silver-bullet solutions, and you should avoid that pitfall."

Limits of Standards

An issue raised by several of the integrators is that while you should definitely look to incorporate industry standards when designing an enterprise architecture, they don't necessarily guarantee interoperability.

"Even successful standards, such as TCP/IP, are not universal," says Schmidt. "When it comes to software standards such as Cobol or Java, interoperability and transportability come at the expense of vendor-specific extensions, forcing developers to use a less-than-ideal core set of 'pure' language features."

This is particularly true when implementing new technologies. McGowan points out that while voice over IP is becoming more popular, it's still better to rely on a single vendor than to hope that pieces coming from different companies will work together properly.

"There is talk about generic [Session Initiation Protocol] stacks and open-source SIP, but when you try to integrate that stuff, it tends to get rela-

tively ugly, relatively quickly," McGowan says.

The same applies for authentication. Mann. The Security Assertion Markup Language (SAML) is designed to allow the exchange of authentication materials between dissimilar authentication systems or multiple versions of a single system that have been installed across a corporate or divisional boundary. But developers have options in how they implement the standard, so although different products can be made to talk to one another, they won't necessarily do so out of the box.

"You may find that two vendors are SAML-compliant, but when you try to make that exchange, it doesn't work," Mann says. "It is not that either one failed to implement the standard, but they both did it slightly differently."

But these problems tend to disappear, or at least get easier to deal with, as time goes on. "The more mature technologies tend to have good, well-proven cross-vendor support," says McGowan.

No Five-Year Plans

Because technology and business needs are constantly changing, you can't operate with Soviet-style five-year plans. Mergers and acquisitions, software and hardware updates, changing economic conditions and numerous other factors all mandate achieving shorter-term results. So break larger projects down into small pieces.

"I think people recognize today that new technology deployments are an ongoing process," says Mann. "They don't do these 'pie in the sky' projects anymore."

She recommends breaking longer-term projects into 90-day chunks, each with a discrete deliverable.

"If you take too long to deliver infrastructure and discrete successes are not noticeable, you will probably lose your funding or lose momentum on your project," Mann says.

In working on smaller pieces, however, don't lose sight of the bigger picture. It requires a balance between the strategic and the tactical, and every bit must advance the overall long-term business and IT plans.

"Integration is often seen as a project-based technological event rather than a mission-critical, enterprise-wide business strategy," Kubbock cautions. "We need to change that."

Integrating Expertise

Successful integration requires that you continually gain and update information on the best ways to integrate systems. One way to achieve this is to become active in trade groups, such as the Integration Consortium, that develop and share information on how to integrate systems. You probably won't be the first one to try a particular type of project, and you'd be better off learning the lessons from people who have been through it before than finding out on your own 12 months into the project.

"It is important for end users and suppliers to engage in collaborative efforts in the industry," says Schmidt. "When you do, play an active role in these organizations; don't just read the papers others write."

Kubbock emphasizes that integration failures often boil down to weaknesses in the personnel, not just the technology, and training on integration is essential for success.

"Then we can achieve a 100% success rate instead of the failure rates we hear about now," he says. "An automobile manufacturer wouldn't make it if three out of 10 cars it built couldn't make it off the lot." ☐ 04478

Robb is a Computerworld contributing writer in Los Angeles. Contact him at drewrobb@att.net.

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John Schmidt, president of the Integration Consortium, has worked in IT for nearly three decades. He has spent half of that time managing large-scale systems integration projects for telcos. Schmidt identifies, explains and offers advice on the in the U.S., Canada and Europe. Schmidt sums up his experience in what he calls "The Five Laws of Integration."

1 The whole is greater than the sum of the parts. "A lone nation a lot of people have is you that you can decompose the job into its component parts," Schmidt says. "But when you do that, end-to-end dependencies get lost and you don't see the impact of a change on a system that is four or five systems down the chain."

2 There is no end state. Integration is an ongoing process, not a final destination. Deploying the application is just the beginning. It must remain useful despite later changes in business needs or operating environment.

3 There are no universal standards. "Even standards themselves change and morph, and there are vendor-specific implementations," Schmidt says. "Standards are great, but have to be practical. Standards are not going to solve all your problems."

4 Information adapts to meet local needs. Rather than trying to impose an enterprise data model that precisely defines the information within of the applications the company uses, gain agreement on information motion within the organization.

5 All details are relevant. Modeling changes involves abstracting away details in order to make complex data more understandable. But even items such as where servers or drivers can produce significant differences, so test the actual production system. Don't just rely on the model.

— Drew Robb

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Supercomputers

DEFINITION

Supercomputer is a relative term, referring to a computer that leads all others in processing capacity and calculation speed at the time it's introduced.

BY JAN MATLIS

OVERCOMPUTING is all about pushing out the leading edge of computer speed and performance. The sports metaphors that arise as research sites compete to create the fastest supercomputer sometimes obscure the goal of

crunching numbers that had previously been uncrunchable — and thereby providing information that had previously been inaccessible.

Supercomputers have been used for weather forecasting, fluid dynamics (such as modeling air flow around airplanes or automobiles) and simulations of nuclear explosions — applications with vast numbers of variables and equations that have to be solved or integrated numerically through an almost incomprehensible number of steps, or probabilistically by Monte Carlo sampling.

The first machine generally referred to as a supercomputer (though not officially designated as one), the IBM Naval Ordnance Research Calculator, was used at Columbia University from 1954 to 1963 to calculate missile trajectories. It predated microprocessors, had a clock speed of 1 microsecond and was able to perform about 15,000 operations per second.

About half a century later, the latest entry to the world of supercomputers, IBM's Blue Gene/L at Lawrence Livermore National Laboratory, will have 131,072 microprocessors when fully assembled and was clocked at 135.3 trillion floating-point operations per second (TFLOPS) in March.

The computer at Livermore will be used for nuclear weapons simulations. The Blue Gene family will also be used for biochemical applications, reflecting shifts in scientific focus, making intricate calculations to simulate protein folding specified by genetic codes.

The early history of supercomputers is closely associated with Seymour Cray, who designed the first officially designated supercomputers for Control Data Corp. in Minneapolis in the late 1960s. His first design, the CDC 6600, had a pipelined scalar architecture and used the RISC instruction set that his team developed. In this architecture, a single CPU overlaps fetching, decoding and executing instructions to process one instruction each clock cycle.

Cray pushed the number-crunching speed available from the pipelined scalar architecture with the CDC 7600 before developing a four-processor architecture with the CDC 8600. Multiple processors, however, raised operating system and software issues.

When Cray left CDC in 1972 to start his own company, Cray Research Inc., in his boyhood hometown of Chippewa Falls, Wis., he abandoned the multi-processor architecture in favor of vector processing, a split that divides supercomputing camps to this day.

Cray Research pursued vector processing, in which hardware was designed to untwarp "for" or "do" loops. Using a CDC 6600, the European Centre for Medium-Range Weather Fore-

casts (ECMWF) produced a 10-day forecast in 12 days. But using one of Cray Research's first products, the Cray I-A, the ECMWF was able to produce a 10-day forecast in five hours.

National Pride

Throughout their early history, supercomputers remained the province of large government agencies and government-funded institutions. The production runs of supercomputers were small, and their export was carefully controlled, since they were used in critical nuclear weapons research. They were also a source of national pride, symbolic of technical leadership.

So when the National Science Foundation (NSF) decided in 1990 to buy a Japanese-made NEC supercomputer for its Colorado weather-research center, the decision was seen as another nail in the coffin of U.S. technological greatness. Antidumping legislation was brought to bear against the importation of Japanese supercomputers, which were and still are based on improvements in vector processing.

But within two years of the NSF's decision, the supercomputing landscape changed. The antidumping decision was revoked. And the ban on exporting supercomputers to nuclear-capable nations was also partially rescinded. What had happened?

For one thing, microprocessor speeds found on desktops had overtaken the computing power of yesterday's supercomputers. Video games were using the kind of processing power that had previously been available only in government laboratories. The first Bush administration defined supercomputers as being able to perform more than 195 million theoretical operations per second (MTOPS). By 1992, ordinary microprocessors were capable of over 450 MTOPS.

Technologists began building distributed and massively parallel super-

The Linpack Benchmark

IN ORDER TO COMPARE the speeds at which supercomputers operate, they need to be performing the same tasks. The Linpack benchmark measures how fast a computer solves dense systems of linear equations and measures a system's floating-point computing power.

The benchmark is based on Linpack, a software library for performing numerical linear algebra on digital computers that was written in Fortran by computer scientists Jack Dongarra, Jim Dunth, Gene Meier and Pete Stewart in the 1970s.

Dongarra, now a distinguished professor of computer science at the University of Tennessee, later introduced the Linpack benchmark, which is used as the performance measure for ranking supercomputers in the Top500 list of the world's fastest computers.

— Jan Matlis

computers and were able to tackle the operating system and software problems that had deterred Seymour Cray from multiprocessor 40 years before. Peripheral speeds had increased so that I/O was no longer a bottleneck. High-speed communications made distributed and parallel designs possible.

As a result, vector processing technology may be in eclipse. NEC Corp. produced the Earth Simulator in 2002, which uses 5,104 processors and vector technology. According to the Top500 list of supercomputers (www.top500.org), the Simulator achieves 35.86 TFLOPS. IBM's Blue Gene/L, the current leader, is expected to achieve about 200 TFLOPS. It consumes 15 times less power per computation and is about 50 times smaller than previous supercomputers.

As detailed on the Top500 site, the trend in supercomputers is toward clusters of scalar processors running Linux and leveraging the power of off-the-shelf microprocessors, open-source operating systems and 50 years of experience with the middleware needed to pull these elements together. **54435**

Matlis is a freelance writer in Newton, Mass. He can be reached at jmatgcm@comcast.com.

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QUICK STUDY

The First Supercomputer

The first supercomputer was the IBM Naval Ordnance Research Calculator, built in 1954. It was a vacuum tube machine that could perform 15,000 floating-point operations per second. It was used to calculate missile trajectories for the U.S. Navy.



Supercomputers

DEFINITION

Supercomputer is a relative term, referring to a computer that leads all others in processing capacity and calculation speed at the time it's introduced.

BY JIM MATIAS

SUPERCOMPUTING is all about pushing out the leading edge of computer speed and performance. The sports metaphors that arise as research sites compete to create the fastest supercomputer are sometimes obscure the goal of crunching numbers that had previously been uncrunchable — and thereby providing information that had previously been inaccessible.

Supercomputers have been used for weather forecasting, fluid dynamics (such as modeling air flow around airplanes or automobiles) and simulations of nuclear explosions — applications with vast numbers of variables and equations that have to be solved or integrated numerically through an almost incomprehensible number of steps, or probabilistically by Monte Carlo sampling.

The first machine generally referred to as a supercomputer (though not officially designated as one), the IBM Naval Ordnance Research Calculator, was used at Columbia University from 1954 to 1963 to calculate missile trajectories. It predated microprocessors, had a clock speed of 1 microsecond and was able to perform about 15,000 operations per second.

About half a century later, the latest entry to the world of supercomputers, IBM's Blue Gene/L at Lawrence Livermore National Laboratory, will have 131,072 microprocessors when fully assembled and was clocked at 135.3 trillion floating-point operations per second (TFLOPS) in March.

The computer at Livermore will be used for nuclear weapons simulations. The Blue Gene family will also be used for biochemical applications, reflecting shifts in scientific focus, making intricate calculations to simulate protein folding specified by genetic codes.

The early history of supercomputers is closely associated with Seymour Cray, who designed the first officially designated supercomputers for Control Data Corp. in Minneapolis in the late 1960s. His first design, the CDC 6600, had a pipelined scalar architecture and used the RISC instruction set that his team developed. In this architecture, a single CPU overlaps fetching, decoding and executing instructions to process one instruction each clock cycle.

Cray pushed the number-crunching speed available from the pipelined scalar architecture with the CDC 7600 before developing a four-processor architecture with the CDC 8600. Multiple processors, however, raised operating system and software issues.

When Cray left CDC in 1973 to start his own company, Cray Research Inc., in his boyhood hometown of Chippewa Falls, Wis., he abandoned the multi-processor architecture in favor of vector processing, a split that divides supercomputing camps to this day.

Cray Research pursued vector processing, in which hardware was designed to unravel "for" or "do" loops. Using a CDC 6600, the European Centre for Medium-Range Weather Fore-

casts (ECMWF) produced a 10-day forecast in 12 days. But using one of Cray Research's first products, the Cray T-3E, the ECMWF was able to produce a 10-day forecast in five hours.

National Pride

Throughout their early history, supercomputers remained the province of large government agencies and government-funded institutions. The production runs of supercomputers were small, and their export was carefully controlled, since they were used in critical nuclear weapons research. They were also a source of national pride, symbolic of technical leadership.

So when the National Science Foundation (NSF) decided in 1996 to buy a Japanese-made NEC supercomputer for its Colorado weather-research center, the decision was seen as another nail in the coffin of U.S. technological greatness. Antidumping legislation was brought to bear against the importation of Japanese supercomputers, which were and still are based on improvements on vector processing.

But within two years of the NSF's decision, the supercomputing landscape changed. The antidumping decision was revoked. And the ban on exporting supercomputers to nuclear-capable nations was also partially rescinded. What had happened?

For one thing, microprocessor speeds found on desktops had overtaken the computing power of yesterday's supercomputers. Video games were using the kind of processing power that had previously been available only in government laboratories. The first Bush administration defined supercomputers as being able to perform more than 195 million theoretical operations per second (MTOPS). By 1997, ordinary microprocessors were capable of over 450 MTOPS.

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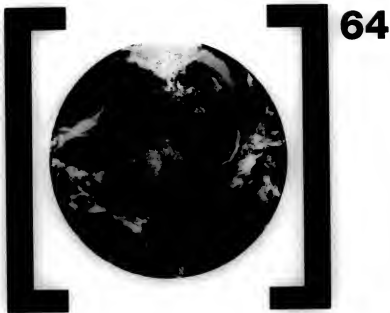
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BRIEFS

UPS Aims to Ease Trade Management

UPS Trade Management Services Inc., a unit of UPS Supply Chain Solutions in Alpharetta, Ga., announced a software suite designed to simplify international trade management. UPS TradeSense is aimed at helping U.S. exporters and importers manage customs clearance and security regulations. It allows companies to keep trade data in one location for easier management and connectivity to global supply chain partners. The software also has screen-level security protocols that require users to log in with a personal identification code and allow access only to parts of the system they are authorized to use. UPS TradeSense is available now.

Start-up Releases Exchange Tool

In Fremont, Calif.-based Zentopia Inc.'s first product offers real-time, automated diagnosis and resolution of operational problems across Microsoft Exchange e-mail systems. Due to ship in August, Zentopia automatically analyzes the Exchange environment, develops historical performance baselines and predicts performance problems. Zentopia also includes a diagnostic and repair database of Exchange symptoms and causes. Pricing starts at \$95 per user per year.

IBM Blade Server Package Debuts

IBM has released an integrated multi-tier system for the multi-tier midrange corporate market that's preconfigured and tested. The system is also preloaded with IBM Workplace Services Express and other software on an IBM eServer BladeCenter H530 system. Pricing starts at \$180 per month for a partial server that can handle 20 users, or \$180 per month for a business integration server that can handle up to 1,000 online entries. Other pricing options are available.

DOUGLAS SCHWEITZER

Linux Muscles Into Microsoft's Space

IS LINUX A BETTER CHOICE for business than, say, a proprietary operating system such as Microsoft Windows? The debate, full of passion and conviction, rages on both sides of this issue. Over the past several years, Linux has elevated itself as a respectable competitor despite Microsoft's dominance in the operating systems market. Linux is used extensively in today's business operating plat-

forms. In Web servers, the Domain Name System, FTP, e-mail, firewalls, Web hosting, network monitoring and desktop applications, for example. Some form of Linux is used in nearly 80% of companies today. Most of them deploy it from a server level, and interest in desktop functionality is growing. The rapid migration of Linux inside global businesses and government agencies is likely related to the increase in quality, security and cost-effectiveness that Linux provides.

Of course, there are arguments from both sides. But when you compare Linux and Windows applications feature for feature, there is very little, if anything, that Microsoft has that Linux hasn't yet perfected.

Security and reliability are, of course, another concern. How can migrating businesses be sure that the security and reliability of their networks will, at the very least, stay intact? Looking at some facts and figures provides a good start. In the past few years, Microsoft has experienced near-catastrophic exploitations with the MyDoom, Nimda and MS Blaster worms. These system exploitations affected countless users and cost individuals, corporations and government agencies millions of dollars in damages and downtime. Since then, Microsoft has had to account for the inadvertent release of part of its sanctified



source code, as well as the much-publicized Internet Explorer vulnerabilities that have forced many users to change their preferred Web browsers. In response, Microsoft attempted to heighten security on all applications to prevent further incidents.

It's not as if Linux hasn't also had its share of vulnerabilities. The notable difference, though, is in the initial discovery and patching of existing vulnerabilities. Vulnerabilities within a code are, for the most part, inevitable, but users will find with Linux that vulnerabilities are identified and patches are released quickly, in many cases before users are even aware that there's a problem. Moreover, the Linux community, as opposed to proprietary vendors, provides instant security enhancements and affords a substantial number of resources from developers in the community to ensure that even seemingly insignificant security flaws are properly addressed.

Since security and reliability go hand in hand, it's a false assumption that the reliability of Microsoft systems may also be lacking. If a system is open to exploitation, downtime as a result of a worm or virus is unavoidable. Furthermore, with such restricted access to the source code, it's possible that code flaws and bugs aren't identified as readily, leaving business-critical applications sluggish and unpredictable. Alternative-

ly, Linux uses the resources of a collaborative development environment, providing vendors with methodically tested code, minimizing the occurrence of flaws and bugs. In addition, this design model offers rapid application evolution and advanced technologies for ever-changing business needs. With frequent application updates and upgrades, Linux systems consistently operate efficiently and effectively.

"Linux is merely a Unix derivative, and Unix is a better operating system for business," says programmer Angel Gomez, who is also chief technology officer at Datastek Applications Inc. in Bridgewater, N.J. "Whether it's SunOS or OpenBSD, they all have one thing in common: They meet the Posix applications interface, which means that business programs can move from one platform to another without any changes."

Unix was the very first nonproprietary networked operating system and has experienced relatively few flaws. Bell Labs researchers created it in a time when perfection, not an instant return on investment, was the objective. Because Linux is essentially a Unix derivative, it follows the same mantra.

Garnering trust in an open-source operating system can be tough, and one of the major downsides for Linux is its perceived lack of end-user support. Although that may have been true in years past, the rapid adoption of Linux for its superior quality and cost-effectiveness has driven Linux vendors to provide comprehensive technical and customer support. Which means, according to Gomez, that "new hardware does not imply new software. When a business has to invest in a custom software base, it is not prudent to base it on a single vendor proprietary operating system."

With Linux, the uptime is high, the price is low, and the flexibility is amazing. **☎ 54488**

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BRIEFS

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Microsoft's security vulnerabilities are a frequent source of concern for Linux users.

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**HACKERS, VIRUSES,
AND WORMS**



**ARE MET WITH SWIFT
AND DECISIVE ACTION**

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CASE STUDY Software Reuse: Making It Work

DTE Energy has set up its own "open-source" software operation. Here's how it got in-house developers to buy into reuse. **Page 37**



Q&A Innovation at the Edge

The future lies at the edge of your company, where it can reach across geographic, corporate and even competitive boundaries to add value, say authors John Hagel III (far left) and John Seely Brown. **Page 38**



OPINION We're Mad as Hell, But...

Users may be fed up with log-sided software licenses, says Gary H. Anthes, but most aren't yet ready to do the hard work of fighting back. **Page 40**

YOU DON'T HAVE TO BE AN IT VETERAN TO HAVE at least one scar that was inflicted by the merger or acquisition of one of your major technology providers. For Rick Osmartian, IT chief financial officer at The Guardian Life Insurance Company of America in New York, make that two, going on three. After watching Meta Group get eaten by Gartner Inc. and PeopleSoft get chomped by Oracle Corp., he's now focused uneasily on the CRM market as a customer of the beleaguered Siebel Systems Inc.

Meanwhile, Robert Robinson, business systems supervisor at Durr Industries Inc. in Plymouth, Mich., is one of many former

Here's how to anticipate and respond when a major supplier is getting swallowed up. By Mary Brandel

WHEN IT VENDORS Merge



J.D. Edwards customers now experiencing what some might call a "twofold." Now that Oracle has acquired PeopleSoft, which two years ago swallowed J.D. Edwards, "it's like watching a fish get swallowed by a seal, and then the seal gets swallowed by a whale," he says. "Everyone's aghast at the seal [being swallowed], but no one remembers the fish."

And more merger and acquisition (M&A) activity is forecast. Leaving out top vendors like Microsoft Corp., Hewlett-Packard Co., Oracle, SAP AG and IBM, "if you look at the eight-to-10-year life cycle of a major software product, you can assume that 30% to 40% of those companies will be acquired," says Dale Kutnick, director of research at Gartner.

Last year, according to Kutnick, M&As among technology companies reached their highest levels since 2001, and he expects that trend to continue this year. The upshot: IT executives should be poised to anticipate and respond to vendor M&As.

Here are some tips from M&A veterans about how to survive — and maybe even benefit — when your IT vendors merge.

UNDERSTAND THE VENDOR. If your vendor is being acquired, you need to understand the acquirer. According to Lou Mazzucchelli, a fellow at Cutter Consortium in Arlington, Mass., there are two types of acquirer: those interested in milking maintenance revenues from a strong but stagnant installed base, and those intending to grow their customer base by subsuming a competitor.

With the first type, "there's a vested interest in keeping you as part of the installed base," he says.

The second type is more problematic because there's no reason for two competitive products to co-exist. "If you're on the wrong side, your application is going away," Mazzucchelli says. "I wouldn't be surprised if they used strong incentives for the customer to switch sooner rather than later." Even if the vendor promises to keep the product alive, don't look for new features.

GET A SECOND, THIRD, EVEN FOURTH OPINION. Nobody holds all the pieces to an M&A puzzle, so Omartian gets lots of opinions. When he first heard the rumors that Oracle intended to buy PeopleSoft, he consulted a range of sources. They included Guardian's investments division, other companies using the vendors' products, research firms, industry analysts, independent user groups, media articles and senior executives at both vendor companies. He asked about the likelihood of the merger's success, what both companies stood to lose or gain and possible outcomes for product lines.

When talking to the acquirer, the more senior the manager you buttonhole, the better, Omartian says, since higher-level executives are more likely to stick around postmerger. But balance that input with what you hear among the rank and file. "Look at information from all your sources," he says.

THREAT, BUT VERIFY. Particularly when talking with corporate representatives, don't believe everything you hear unless it's also in writing. "I've been through a lot of mergers, and things change day to day," Omartian says. "Nothing's certain in a merger."

Others agree. During the PeopleSoft/Oracle merger, many customers insisted on meeting directly with CEO Larry Ellison before they believed reports that they'd be supported through 2013, says Jason Aver-

WHAT THEY'RE UP TO

MEAN IT. If you threaten to walk, you have to be prepared to do it, and that means having an alternative in mind. Start by knowing the value of the software to your organization, Mazzucchelli says. Averbook points out that companies tend to use only 20% to 30% of the features in a software application, so find out which ones you actually need.

Begin running tests of open-source versions of your applications. Even if you can't feasibly fall back on them, just going through the motions should be enough to get the vendor to take the threat seriously. "If I'm highly dependent on a proprietary application that does function x, I want an open-source version in my lab so I can use that to put pressure on a vendor," Mazzucchelli says.

MAKE A PLAN. Prepare what Averbook calls a "technology strategy map," aligning the goals and initiatives of your company over the next three years with the technology to support those goals. This will enable you to identify technology gaps, as well as one to three vendors that offer the required technology. When you know what you have and what you need going forward, you can make faster decisions about whether the new combined company meets your needs, Averbook says.

It beats freezing development while the merger shakes out, which can take six months to a year. "That's like when two airlines merge, you stop flying until you figure out the new pricing model," Averbook says. "In this new era of software consolidation, it's important for customers to take control of their own path."

BUILD IN PROTECTION. Use your software contracts to guarantee service levels and maintenance costs, Kutnick says, and consider requesting guaranteed discounts on maintenance costs in the event of an acquisition.

Acquirers may not honor the level of service outlined in a contract, Kutnick says, but at least you have a strong negotiating point to start with.

"As long as you're contractually obligated to receive that level of service, you have an exit," Omartian adds. Guardian also makes sure that it retains rights to its source code when signing on with smaller vendors, so it can continue development even if the vendor disappears.

BE SUSPICIOUS. Learn to read signs that a company is a potential target based on moves it's making. "If they're issuing a lot of press releases or expanding into new functional areas, you can figure they'll be in this for a while," Averbook says. But if you don't see a lot of innovations to the product suite, that might be a company's way of positioning itself to be bought.

This doesn't mean you need to avoid potential targets, Kutnick says. Just maintain a clear delineation between applications that might fade from the scene and the software underlying your infrastructure.

"Let's say you're going to do something with BEA, which is high on my list of likely acquisition companies in the next three years," Kutnick says. "You need to understand all the interfaces and document where you make changes. You can use it, but with open eyes." ■ **54379**

Brundel is a Computerworld contributing writer in Grand Rapids, Mich. You can contact her at mary-brundel@comcast.net.

book, CEO at Knowledge Infusion, a consulting firm in Danville, Calif.

Robinson is applying the skepticism he acquired during the J.D. Edwards acquisition to the Oracle purchase of PeopleSoft. "Questions get asked and answered, but it's just words," he says. "What it really comes down to are the deeds."

For instance, Oracle has promised to work through the Quest International User Group to fulfill requests for product enhancements from the former J.D. Edwards — a practice PeopleSoft dropped, much to Robinson's dismay, when it bought that company. At an upcoming Quest meeting, the group plans to submit some requests to check that promise. "It's a test balloon to see if the process will work," Robinson says.

IF YOU HAVE LEVERAGE, ACT QUICKLY. Companies with a large investment in the acquired technology have some bargaining to do. In the early part of a merger, acquiring firms are particularly sensitive about stabilizing revenues. That's the time customers have the most leverage, and that's why Mazzucchelli advises that you bundle with the acquiring vendor quickly.

"At the instant of the acquisition's closing, if you have any leverage at all, play your cards immediately and let them know, 'I get my concessions or I walk,'" he says. "You've got to play hardball, and the longer you wait, the less negotiating power you have."

Omartian agrees. "When we meet with senior managers, we make clear to them what we're happy with in the relationship and that if we don't see that continuing, we won't be in a long-term relationship," he says.

Software Reuse:

MAKING IT WORK

DTE Energy may have cracked the cultural side of reusable software. By Gary H. Anthes

AT DTE ENERGY CO., lone wolves need not apply. "Lone-wolf developers" is actually what Lynne Elynn calls them, and she says they are the reason so many companies fail at software reuse. Elynn, a senior vice president and CIO at DTE Energy, claims that her company has found a better way — one that marries the principles of open-source software with keen insights into how people learn and what motivates them. Elynn says the Detroit-based diversified energy company has set up an internal "open-source" software operation. Developers across the \$7 billion company add their creations to a reuse library and take needed components from it. Sometimes they put the components back after improving them. The spirit of the program borrows heavily from the external open-source movement that's behind the Linux operating system, the Apache Web server and other popular pieces of nonproprietary software.

DTE Energy has focused on the concept of "meritocracy," one of the underpinnings of the open-source movement, according to Elynn. Meritocracy has two basic tenets at the company: First, items submitted for inclusion in the reuse library must be reviewed and judged to be of high quality, or they won't be accepted. Second, the people whose submissions are accepted are held in high esteem by the development communities of which they are a part.

This spirit of meritocracy, and the sense of community that goes with it, are the missing ingredients in most

failed software-reuse efforts, Elynn says.

The review and approval function at DTE Energy is performed by a panel of five senior developers. "They are all pretty universally admired within the organization for their excellence in software development," Elynn says, "so they have some stature with our community."

Some of the components included in the reuse library have been volunteered by programmers who developed them for a project and saw the possibility for broader use. In other cases, a development team has been commissioned by the review panel to develop something specifically for reuse. The panel reviews requirements at the beginning of all projects, looking for reuse opportunities.

"Either way," Elynn says, "[the component] still has to be judged, and the process of acceptance is one of recognizing the excellence in people. The dynamic is around public recognition of merit, and that's very energizing."

SEPARATE CODE

DTE Energy's software-reuse program is based on the notion of shared services, in which various functions common to multiple applications — such as security, logging, lookup or configuration — are carved off as separate code (usually Java) that can be invoked as services by new applications as they are built.

Developers meet quarterly and sometimes more often to discuss ideas, problems and best practices. And meetings

certifications, such as for J2EE, are recognized at these meetings, as are those who have contributed to the reuse repository. "We say, 'This person has done great work. Let's applaud that,'" Smith says.

Developers also extensively use internal mailing lists and discussion groups. Some of the 15 or so lists are devoted to specialized groups, while others include all 400 developers. Smith says, "Someone will send out a question like, 'I'm struggling trying to get this inserted in the database. Has anyone out there come across this problem?' Regardless of the solution, it's owned by the whole group. Everything is focused on community," Smith says. Project teams are "crose-pollinated" with developers from different Michigan offices and with people of varying levels of ability, he says.

NO HIERARCHY

Although contributors are publicly recognized, the company takes pains not to establish a hierarchy of developers. "We try to steer away from status, because status just divides people," Smith says. "We definitely applaud [reuse] and celebrate it, but it's not like, 'Oh, this person has submitted three components, and this other person has only submitted two.'"

DTE Energy saved \$75,000 last year by reusing components, estimates Smith. So far this year, four new projects have incorporated 10 components each on average, or about 40% of their total application code.

Without the kind of cultural support DTE provides, reuse is likely to succumb to any number of technical pitfalls, says Tom Welsh, an analyst at Gartner Consortium in Arlington, Mass. "DTE is going in the right direction. Reuse is a corporate team business and cannot usually be undertaken by individuals or even small groups," says Welsh.

Vamsi Dattaluri is a Java programmer working on a voice-response development project at DTE Energy. She says the project has used four source-code components from the reuse library. Some of them would have taken weeks of development effort had she coded them from scratch, she says. Dattaluri hasn't yet contributed a component to the reuse library, but she did contribute to the development community recently by helping to set up a Java training program. "Two years back, not many people knew about me," she notes. "But I got a lot of recognition for that." © 543081

A Palette of Options

of "development communities," as for Java, happen once a month, says Phillip Smith, one of the five technical architects on the review panel. "Supervisors don't own our meetings; the practitioners own them," he says. "So it's not your boss disseminating things; it's a peer-to-peer type of communication." People who have earned industry

JD Edwards customers now experiencing what some might call a "twofor." Now that Oracle has acquired PeopleSoft, which two years ago swallowed JD Edwards, it's like watching a fish get swallowed by a seal, and then the seal gets swallowed by a whale," he says. "Everyone's aghast at the seal being so eaten, but no one remembers the fish."

And more merger and acquisition (M&A) activity is forecast. Leaving out top vendors like Microsoft Corp., Hewlett-Packard Co., Oracle, SAP AG and IBM, "If you look at the eight-to-10-year life cycle of a major software product, you can assume that 90% to 40% of those companies will be acquired," says Dale Kutnick, director of research at Gartner.

Last year, according to Kutnick, M&A among technology companies reached their highest levels since 2001, and he expects that trend to continue this year. The upshot: IT executives should be poised to anticipate and respond to vendor M&As.

There are some ups from M&A veterans about how to survive — and maybe even benefit — when your IT vendors merge.

UNDERSTAND THE VENDOR. If your vendor is being acquired, you need to understand the acquirer. According to Iru Mazzucchelli, chief of staff at Eartner Consortium in Arlington, Mass., there are two types of acquirers: those interested in milking maintenance revenues from a strong but stagnant installed base, and those intending to grow their customer base by subsuming a competitor.

With the first type, "there's a vested interest in keeping you as part of the installed base," he says.

The second type is more problematic because there's no reason for two competitive products to co-exist. "If you're on the wrong side, your application is going away," Mazzucchelli says. "I wouldn't be surprised if they used strong incentives for the customer to switch sooner rather than later." Even if the vendor promises to keep the product alive, don't look for new features.

GET A SECOND, THIRD, EVEN FOURTH OPINION. Nobody gets all the pieces to an M&A puzzle, so Omartian gives lots of opinions. When first heard the rumormongers that Oracle intended to buy PeopleSoft, he consulted a range of sources. They included Guardian's investments division, other companies using the vendors' products, research firms, industry analysts, independent user groups, media articles and senior executives at both vendor companies. He asked about the likelihood of the merger's success, what both companies stood to lose or gain and possible outcomes for product lines.

When talking to the acquirer, the more senior the manager you buttonhole, the better, Omartian says, since higher-level executives are more likely to stick around postmerger. But balance that input with what you hear among the rank and file. "Look at information from all your sources," he says.

TRUST, BUT VERIFY. Particularly when talking with corporate representatives, don't believe everything you hear unless it's also in writing. "We've been through a lot of mergers, and things change day to day," Omartian says. "Nothing's certain in a merger."

Others agree. During the PeopleSoft-Oracle merger, many customers insisted on meeting directly with CEO Larry Ellison before they believed reports that they'd be supported through 2013, says Jason Aver-

WHAT THEY'RE UP TO

Mergers and acquisitions happen for various reasons, and smart users need to know what their vendors are up to. Dale Kutnick, director of research at Gartner, breaks M&As into three categories:

Accretive

■ Most current deals fit into this category. They're intended to improve margins via cost-cutting; combining overlapping products, services and processes; and increasing market share.

Synergistic

■ These M&As are more beneficial to users. They occur when the resulting merger combines complementary products from the two companies' processes or capabilities, such as customer management or product innovation. An example is Cisco Systems Inc.'s M&A activity in the late 1990s. Cisco allowed its new acquisitions to concentrate on product innovation and maintain their creative cultures while integrating the new units into its own well-established business processes.

Innovative

■ These deals result when major changes in business processes reshape the market. An example is BEA Systems Inc.'s 1996 acquisition of WebLogic. BEA turned the new unit's Java-based application server into its main product line and top asset.

book. CHO at Knowledge Infusion, a consulting firm in Danville, Calif.

Robinson is applying the skepticism he acquired during the JD Edwards acquisition to the Oracle purchase of PeopleSoft. "Questions get asked and answered, but it's just words," he says. "What it really comes down to are the deeds."

For instance, Oracle has promised to work through the Qwest International User Group to fulfill requests for product enhancements from the former JD Edwards — a practice PeopleSoft dropped, much to Robinson's dismay, when it bought that company. At an upcoming Qwest meeting, the group plans to submit some requests to check that promise. "It's a test balloon to see if the process will work," Robinson says.

IF YOU HAVE LEVERAGE, ACT QUICKLY. Companies with a large investment in the acquired technology have some bargaining to do. In the early part of a merger, acquiring firms are particularly sensitive about stabilizing revenues. That's the time customers have the most leverage, and that's why Mazzucchelli advises that you huddle with the acquiring vendor quickly.

"At the instant of the acquisition's closing, if you have any leverage at all, play your cards immediately and let them know, 'I get my concessions or I walk,'" he says. "You've got to play hardball, and the longer you wait, the less negotiating power you have."

Omartian agrees. "When we meet with senior managers, we make clear to them what we're happy with in the relationship and that if we don't see that continuing, we won't be in a long-term relationship," he says.

MEAN IT. If you threaten to walk, you have to be prepared to do it, and that means having an alternative in mind. Start by knowing the value of the software to your organization, Mazzucchelli says. Averbbook points out that companies tend to use only 20% to 80% of the features in a software application, so find out which ones you actually need.

Begin running tests of open-source versions of your applications. Even if you can't feasibly talk back on them, just going through the motions should be enough to get the vendor to take the threat seriously. "If I'm highly dependent on a proprietary application that does function x, I want an open-source version in my lab so I can use that to put pressure on a vendor," Mazzucchelli says.

HAVE A PLAN. Prepare what Averbbook calls a "technology strategy map," aligning the goals and initiatives of your company over the next three years with the technology to support those goals. This will enable you to identify technology gaps, as well as one to three vendors that offer the required technology. When you know what you have and what you need going forward, you can make faster decisions about whether to buy new, combined company, merge your needs, Averbbook says.

It bears freezing development while the merger shakes out, which can take six months to a year. "That's like when two airlines merge: you stop flying until you figure out the new pricing model," Averbbook says. "In this new era of software consolidation, it's important for customers to take control of their own path."

BUILD IN PROTECTION. Use your software contracts to guarantee service levels and maintenance costs, Kutnick says, and consider requesting guaranteed discounts on maintenance costs in the event of an acquisition.

Acquirers may not honor the level of service outlined in a contract, Kutnick says, but at least you have a strong negotiating point to start with.

"As long as you're contractually obligated to receive that level of service, you have an out," Omartian adds. Guardian also makes sure that it retains rights to its core code when signing on with smaller vendors, so it can continue development even if the vendor disappears.

BE SUSPICIOUS. Learn to read signs that a company is a potential target based on moves it makes. "If they're issuing a lot of press releases or expanding into new functional areas, you can figure they'll be in this for a while," Averbbook says. But you don't see a lot of innovations to the product suite that might be a company's way of positioning itself to be bought.

This doesn't mean you need to avoid potential targets, Kutnick says. Just maintain a clear delineation between applications that might fade from the scene and the software underlying your infrastructure.

"Let's say you're going to do something with M&A, which is high on my list of likely acquired companies in the next three years," Kutnick says. "You need to understand all the interfaces and document where you can change things. You can use it, but with open eyes." ■ **54378**

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A LONE WOLF DOES NOT apply. "Lone-wolf developers" is actually what I mean," Elynn explains, and she says they are the reason so many companies fail at software reuse. Elynn, a senior vice president and CIO at DTE Energy, claims that her company has found a better way — one that marries the principles of open-source software with her insights into how people learn and what motivates them.

Elynn says the Detroit-based diversified energy company has set up an internal "open-source" software operation. Developers across the \$7 billion company add their creations to a reuse library and take needed components from it. Sometimes they put the components back after improving them. The spirit of the program borrows heavily from the external open-source movement that's behind the Linux operating system, the Apache Web server and other popular pieces of nonproprietary software.

DTE Energy has focused on the concept of "meritocracy," one of the underpinnings of the open-source movement, according to Elynn. Meritocracy has two basic tenets at the company: First, items submitted for inclusion in the reuse library must be reviewed and judged to be of high quality, or they won't be accepted. Second, the people whose submissions are accepted are held in high esteem by the development communities of which they are a part. This spirit of meritocracy, and the sense of community that goes with it, are the missing ingredients in most

Software Reuse:

MAKING IT WORK

DTE Energy may have cracked the cultural side of reusable software. By Gary R. A. [illegible]

failed software reuse efforts. Elynn says. The review and approval function at DTE Energy is performed by a panel of five senior developers. "They are all pretty universally admired within the organization for their excellence in software development," Elynn says, "so they have some stature with our community."

Some of the components included in the reuse library have been volunteered by programmers who developed them for a project and saw the possibility for broader use. In other cases, a development team has been commissioned by the review panel to develop something specifically for reuse. The panel reviews requirements at the beginning of all projects, looking for reuse opportunities.

"Either way," Elynn says, "the component" still has to be judged, and the process of acceptance is one of recognizing the excellence in people. The dynamic is around public recognition of merit, and that's very energizing."

SEPARATE CODE

DTE Energy's software reuse program is based on the notion of shared services, in which various functions common to multiple applications — such as security, logging, lookup or configuration — are carved off as separate code (usually Java) that can be invoked as services by new applications as they are built.

Developers meet quarterly and sometimes more often to discuss ideas, problems and best practices. And meetings



of "development communities," as for Java, happen once a month, says Phillip Smith, one of the five technical architects on the review panel. "Supervisors don't own our meetings; the practitioners own them," he says. "So it's not your boss disseminating things; it's a peer-to-peer type of communication." People who have earned industry

reputation are invited to lead these meetings, which have a creditable 90% attendance rate. Smith says, "The participants are all part of the team, not just the supervisors."

Developers also contribute to the reuse library by adding code to existing libraries and creating new ones. Some of the 15 or so libraries include code for application groups, which can include all 100 developers. Smith says, "Someone will send out a question like, 'I'm struggling trying to get this new file in the database. Has anyone out there come across this problem?' Regardless of the solution, it's owned by the whole group. Everything is focused on community," Smith says. Projects are not as closely followed with developers in an office. Managing office and with people of varying levels of ability, he says.

NO HIERARCHY

Although contributors are public, recognized, the company takes pains not to establish a hierarchy of developers. "We try to steer away from status-based status just 'judo people,'" Smith says. "We definitely applaud [reuse] and celebrate it, but it's not like, 'Oh, this person has submitted three components, and this other person has only submitted two.'"

DTE Energy saved \$75,000 last year by reusing components, estimates Smith. So far this year, four new projects have incorporated 10 components each on average, or about 40% of their total application code.

Without the kind of cultural support DTE provides, reuse is likely to succumb to any number of technical pitfalls, says Tom Welsh, an analyst at Cutter Consortium in Arlington, Mass.

"DTE is going in the right direction. Reuse is a corporate team business and cannot usually be undertaken by individuals or even small groups," says Welsh.

Vamsi Dattarai is a Java programmer working on a voice-response development project at DTE Energy. She says the project has used four source-code components from the reuse library. Some of them would have taken weeks of development effort had she coded them from scratch, she says.

Dattarai hasn't yet contributed a component to the reuse library, but she did contribute to the development community recently by helping to set up a Java training program. "Two years back, not many people knew about me," she notes. "But I got a lot of recognition for that." ☐ 54381

1. COMMUNITY AND SUPPORT

Has the project been supported by a community of developers? Has the project been supported by a community of developers?

2. REUSE OPPORTUNITIES

Are there reusable components in the project? Are there reusable components in the project?

3. SUPPORT AND TRAINING

Are there support and training resources available? Are there support and training resources available?

Innovation at the Edge

The place to look for an advantage is at the edge of your business, say John Hagel III and John Seely Brown.

Q&A

Most companies are structured to run their operations efficiently and squeeze as much profit as possible from each transaction. But emerging competitors in Asia are much more interested in innovation, and they're changing the rules about how to achieve it. In their new book, *The Only Sustainable Edge*, John Hagel III and John Seely Brown look at this approach to innovation and its implications for U.S. companies and IT organizations. They talked with Computerworld's Thomas Hoffman about the changing business landscape.

As you point out, most companies are structured to run efficiently, not to drive innovation. For companies to flip the equation, they'd need to make some pretty unsettling changes to their operating models, yes?

JH: I would certainly accept that it's a challenge. To get better faster, you need to do that in partnership with other companies. No matter how many smart people there are in your organization, there are a lot more smart people outside that you could work with. We tried to provide a path for companies to make this transition — develop those relationships to get better faster and develop capabilities faster.

JB: The first step is to move from a very closed view of innovation to a more open model where there are suppliers and other people around the world that are at least as talented as people within our organization. [Then] we can ask questions such as, "How can we tap into their innovation?" and "What do we want to consider to be our distinctive edge?" and "How can we work with these people and extend our own capabilities?"

If you look at what we're doing with computer architectures, we can take advantage of loose connections and coordinate processes and practices with other organizations. From a technical point of view, we now have SOA [service-oriented architecture] and virtualization architectures and this whole notion of social software. Organizations can now examine how this folds into SOAs to support long-lived conversations as opposed to short-lived transactions.

Are some companies doing this effectively now?

JH: One company that we profile extensively is Li & Fung in the apparel industry. [Li] helps apparel designers assemble customized supply chains and deliver very tight performance requirements in terms of speed to market and cost and quality objectives, but [it's] doing it in such a loosely coupled way.

This parallels what the SOA and Web services community would talk about in defining interfaces to move one module in and one module out. Most American companies tend to very tightly define requirements throughout all stages of the process.

A lot of this is being driven by the mid-set and the sense of urgency in Asia. There's the sense that the wage rate advantages they have are very transitional and that if they fall back on that, they are going to rapidly lose market share.

Why are the greatest opportunities found at the "edge," whether it's the edge of the business where conventional forces with business partners or at the periphery of mature markets?

JB: At the edge, you have less inertia, so you can experiment, and you don't have big legacy systems, so any competitive edge is to think about things differently.

JH: At the edge, you will be able to build your capabilities much more rapidly than organizations that are more inward-focused.

Is it fair to say that most companies will struggle? If not fail, at trying to move in this direction?

JH: If they continue to be complacent and focus on operational efficiency versus driving capability, they will fail.

What we see in these Asian companies is a focus on rapid innovation. It's a much different mind-set than what most Western companies do today.

JB: And Western companies [need] to recognize that they don't have a divine right to be the main source of innovation.

Are CEOs well positioned to support businesses that try to make these transformational changes?

JH: IT is a key enabler of these practices, and CEOs can be catalysts and change agents to help senior management recognize what's available to support these broader changes.

There's also the ability to recognize what's possible through SOA, through loose coupling — an important foundation in recognizing new processes.

JB: Part of the irony is that it's the IT infrastructure — like monolithic ERP systems — that keeps businesses from experimenting with new things. It's not always the big bang but the ability to make new iterations with blinding speed that drives new opportunities. © 54421

BOOK EXCERPT

A New Worldview



We believe that a new opportunity and a new imperative — the acceleration of capability building — will shift our individual and collective mind-sets from a worldview that focuses on static, zero-sum relationships to one that emphasizes dynamic, non-zero-sum relationships. As

we adopt these different perspectives, we will find that most of our institutions today are fundamentally lacking.

Static, zero-sum worldviews generally arise when people focus on the allocation of existing resources. Existing resources have a fixed quantity, and with relatively modest exceptions, if one party acquires a resource, other parties are deprived of that resource.

With its 70-year focus on equilibrium states, the economic profession has reinforced this orientation. Equilibrium states are easier to model quantitatively, but such models simplify the world, including the key assumptions that capabilities are a given.

If we recognize that capabilities are not a given but can be quickly built, our worldview undergoes a fundamental shift. Now we become less concerned with the distribution of rents and more focused on the creation of new rents. Relationships that were previously viewed as competitive become more complementary — we begin to realize that we need other specialized players if we wish to deepen our own capabilities more quickly. The new value we can create together moderates, even if it never entirely eliminates, the concerns about the distribution of the proceeds. We begin to turn our attention more to the people we work with, because they hold the key to the acceleration of creatively building capability — and therefore the creation of new value.

More generally, stocks of existing assets, including information and knowledge, diminish in value relative to flows of new ideas and experiences that can help accelerate our capability building. In many cases the institutional ability to accelerate capability building will depend as much on position in relevant flows as on the attributes of the institution itself. For this reason, this new worldview emphasizes the importance of the evolution of local ecosystems, global process networks and communications and transportation infrastructure rather than focusing on institutions in isolation.

Adapted from The Only Sustainable Edge: Why Business Strategy Depends on Productive Friction and Dynamic Specialization, by John Hagel III and John Seely Brown, with permission of Harvard Business School Press.

Competing IN A New Age

Three books look at dwindling U.S. talent, project management and the realities of real time. **BY THOMAS HOFFMAN**



■ **The Flight of the Creative Class: The New Global Competition for Talent**, by Richard Florida (HarperBusiness, 336 pages, \$25.95). For decades, the U.S. has reigned as the world's center for innovation, be it in high tech, science or entertainment. And as Florida astutely observes, "Of critical importance to American success this last century has been an influx of global talent," from Scottish-born steel titan Andrew Carnegie to the Hungarian co-founder of Intel, Andy Grove.

But as Florida, the Hirst Professor at George Mason University's School of Public Policy, argues, a combination of factors, including better occupational and educational opportunities in places like Singapore and India, are leading to a global war for creative talent—a battle that he believes the U.S. is positioning itself to lose.

Tighter immigration and visa policies that have been adopted since 9/11

are leading an increasing number of foreign-born graduate students to enroll in non-U.S. universities and to work outside the country in more-receptive environments. But that's just one of the problems that's diminishing the nation's ranking as a key destination for creative workers, says Florida.

He also notes that 40 million people, or roughly 30% of the U.S. workforce, are members of what he terms the "creative class"—people who are employed in industries ranging from science and engineering to the arts and white-collar professions such as law. But that leaves the other 70% struggling to survive in lower-paying manufacturing and service-industry jobs, a situation that Florida says is "exacerbating economic inequality."

Meanwhile, regions such as Bangalore, Tel Aviv, Singapore and Beijing are aggressively recruiting foreign technology companies and investing heavily in higher education and in research and development.

In this smartly written and well-documented book, Florida calls upon government, business and academic leaders—as well as everyday citizens—to develop something as large-scale as the New Deal to build a fully creative society. Even those readers who disagree with Florida's anti-isolationist views will find this well-crafted tome thought-provoking and worthwhile.

■ **The Rational Project Manager: A Thinking Person's Guide to Getting Work Done**, by Andrew Longman and Jim Mullins (John Wiley & Sons Inc., 256 pages, \$27.95). Savvy project managers know that the biggest roadblocks to delivering proj-

ects on time and within budget and scope are typically organizational inertia and people issues. The authors, who are consultants at Kepner-Tregoe Inc. in Princeton, N.J., do a deft job of addressing these topics while incorporating their organization's problem-solving and decision-making techniques.

They also provide a useful perspective on why today's projects are different from those that came before. For example, they point out the challenges of managing a project that's planned by one group and implemented by another.

The book includes a chapter devoted to managing people, and although some of the authors' suggestions may come off as no-brainers ("Does the performer have the necessary knowledge and skill to perform?"), they address fundamental questions that project leaders should continually be asking themselves.

The authors raise issues that are rarely included in project management texts, such as the importance of obvious questions like, "Why are we doing



this project?" Also of value are tips and pitfalls boxes throughout each chapter.

Given the increasing amount of complexity that today's project managers face, it's refreshing to come across a book that does such an effective job of breaking these challenges down into bite-size portions.

■ **The Real-Time Enterprise: Competing on Time With the Revolutionary Business Systems Machine**, by Peter Fingar and Joseph Bellini (McGraw-Hill Press, 224 pages, \$34.95). The notion of a real-time enterprise (RTE) that's able to sense and respond quickly to customer demands and market shifts has been around for years. But in the real world, only a few companies, like Dell Inc. and Cisco Systems Inc., have been able to pull this off, in part by leveraging business process management systems to flatten their operations and differentiate themselves from competitors bound to old technologies.

Fingar, an executive partner at The Greystone Group LLC, and Bellini, a senior vice president in the software products and services group at Brooks Automation Inc., do a proficient job of documenting the successes of RTE pioneers, including General Electric Co., The Progressive Corp. and Wal-Mart Stores Inc. The authors detail how they became more responsive to customers and mastered business process management to help them dominate their markets.

Although the authors underscore the need for organizations to provide themselves with ample time to absorb the process changes that come with RTE, they devote just two and a half pages to the most critical requirements for success—people and corporate culture. (Note: "Sex Machine" refers to an acronym for strategy and execution, not to be confused with James Brown's 1970 funk classic.) ■ **\$42.98**



Competing IN A New Age

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EVENTS

IT Infrastructure

■ July 13-15, San Diego

Sponsor: Burton Group

Catalyst Conference North America includes multiple tracks and topics, such as the business justification for identity management, the value of the net work application platform, implementing Web services, the right VPN for remote access, preparing networks for IP telephony, and evolving security strategies.

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WAN Summit 2005. Driving the Extra Step With IP Communications in clouded directions in video and collaboration, managing video conferencing with HDTV, video conferencing and other synchronous technologies, and location. The managed services contain drama and transforming business into managed services with networked collaboration. www.wanhouse.com/wsummit

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■ July 27-29, Annapolis, Md.

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Topics of the 2005 Leadership Excellence Summit: Ethics, Integrity & Character include building a culture of leadership excellence, decision making, authority, credibility, and trustworthiness; leadership challenges of a company in transition; transformational leadership; and globalization of leadership concepts. www.conference-board.org/conferences

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■ Aug. 10-11, Scottsdale, Ariz.

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ITIL Implementation Road Map includes topics such as establishing a service desk according to the Information Technology Infrastructure Library defining an ITIL, enabling organization structure and process roles, integrating people, processes and technology IT governance, building an IT service management improvement plan and implementing configuration management. www.pinkelephant.com/conference

We're Mad As Hell, But ...

I HAVE A FANTASY that goes like this: I'm downloading some software from a vendor's Web site, and I'm presented with a screen with many lines of tiny type followed by two boxes. One says "I accept," and the other says "I do not accept." I'm feeling lucky — or maybe just cantankerous — so I click the "I do not accept" box. The download comes to an abrupt end.

But a few moments later, I receive an e-mail from the software vendor: "Dear Sir," it says, "we couldn't help noticing that you rejected our license agreement, the one that gives us all the rights and no remedies when our software crashes or admits hackers, as it surely will. Frankly, we don't blame you. As buyers, we'd never sign anything like that either. But we really, really want your business, so we are going to let you have the software anyway. We just ask that you keep this quiet."

Fantasy, indeed. But recently, I was given hope that packaged software license agreements, surely the most lopsided in all the world of commerce, might be changing. Two of the IT luminaries I interviewed for Computerworld's recent special report on the future of IT [Quicklink 527.88] said the time is ripe for software buyers to assert themselves. Users are so fed up with bugs, bloatware and security flaws that they will finally rise up and demand guarantees and remedies from vendors, they said.

At about the same time, The Wall Street Journal published a story saying that customers are "starting to press software makers to assume responsibility for faults and pick up some of



DAVID H. WEIDENFELD is a Computerworld national correspondent. Contact him at dave@weidenfeld.com.

the costs." The Journal noted darkly that "even a whisper of the 'I want'—liability—sends shudders through the software industry."

But after poking into this issue, I found few shudders among either sellers or buyers. Vendors have no plans to change, and while users grumble, for the most part, they accept the status quo.

Buyers' legal leverage is apparently so weak that when I asked Mark Grossman, an attorney at DeWitt Grossman PLL, what advice he gives clients, he cited IT measures, not legal ones: "Redundancy, backup, bringing in security consultants and patching the holes."

So my plan to write a front-page story with a catchy headline like "Software Customers Cast Off Their Chains" or "Users Mad as Hell, Not Going to Take It Anymore" evaporated.

But that's not quite the end of the story. David Weidenfeld, an attorney at McDonald's Corp. who specializes in IT procurement, says nothing much has changed in recent years when it comes to buying packaged software. But, he insists, it's not true that buyers have no leverage. Whereas Joe Consumers like me won't get anywhere by

clicking the "I do not accept" button, it's a different story for corporate buyers. "There are things you can do," he says, "but you have to work really hard."

For example, Weidenfeld says, it took him months of negotiation to get a software vendor to amend its boilerplate contract to close what he saw as a serious security loophole. The software had a back door — which the vendor told customers about — by which it automatically reported usage of the software for purposes of verifying compliance with licensing terms. But Weidenfeld insisted on a provision that stipulated to the vendor, "You will have no code in this software that's not part of the business application, and if you do, and anything happens, you are responsible for all the damages that occur."

Although Weidenfeld achieved a significant victory, he says too often the purchasing and legal people negotiating with software vendors are not trained in IT, are not part of the IT department and by habit focus on price negotiations. "They say, 'This is not the mainstream of our business. I lowered the price a little, I'm happy, let's get out of here.'"

Weidenfeld says that to break this mind-set, all procurement of IT should be consolidated under the CIO, but he notes that the CIO may need a significant boost in staff and budget to handle the load.

Successful negotiating is a matter of hard work and resolve, he says. "If you aren't prepared to give the vendor a flat 'no,' or a 'not now,' there's a limit to what you can accomplish."

So when the time is right for that front-page story, perhaps the headline will say, "Users Work Like Hell, Not Going to Take It Anymore." ☎ 54237

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GARY H. ANTHERS

We're Mad As Hell, But ...

I HAVE A FANTASY that goes like this: I'm downloading some software from a vendor's Web site, and I'm presented with a screen with many lines of tiny type followed by two boxes: One says "I accept," and the other says "I do not accept." I'm feeling lucky — or maybe just cantankerous — so I click the "I do not accept" box. The download comes to an abrupt end.

But a few moments later, I receive an e-mail from the software vendor. "Dear sir," it says, "we couldn't help noticing that you rejected our license agreement, the one that gives us all the rights and you no remedies when our software crashes or admits hackers, as it surely will. Frankly, we don't blame you. As buyers, we'd never sign anything like that either. But we really, really, really want your business, so we are going to let you have the software anyway. We just ask that you keep this quiet."

Fantasy, indeed. But recently, I was given hope that packaged software license agreements, surely the most lopsided in all the world of commerce, might be changing. Two of the IT luminaries I interviewed for *Computerworld*'s recent special report on the future of IT (QuickLink 52738) said the time is ripe for software buyers to assert themselves. Users are so fed up with bugs, bloatware and security flaws that they will finally rise up and demand guarantees and remedies from vendors, they said.

At about the same time, *The Wall Street Journal* published a story saying that customers are "starting to press software makers to assume responsibility for faults and pick up some of



the costs." *The Journal* noted darkly that "even a whisper of the 'I word' — liability — sends shudders through the software industry."

But after poking into this issue, I found few shudders among either sellers or buyers. Vendors have no plans to change, and while users grumble, for the most part, they accept the status quo.

Buyers' legal leverage is apparently so weak that when I asked Mark Grossman, an attorney at DeWitt Grossman P.L., what advice he gives clients, he cited IT measures, not legal ones: "Redundancy, backup, bringing in security consultants and patching the holes."

So my plan to write a front-page story with a catchy headline like "Software Customers Cast Off Their Chains" or "Users Mad as Hell, Not Going to 'Take It Any More'" evaporated.

But that's not quite the end of the story. David Weidenfeld, an attorney at McDonald's Corp. who specializes in IT procurement, says nothing much has changed in recent years when it comes to buying packaged software. But, he insists, it's not true that buyers have no leverage. Whereas Joe Consumers like me won't get anywhere by

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FBI on the Move

HOW FAST CAN THE FBI MOVE? Last week, FBI Director Robert Mueller told a Senate subcommittee that the bureau is working on a new computer system that will let agents share information about cases they're working on, but the software won't go live for another year and a half (see story, page 45).

If that sounds slow, you haven't been paying attention.

This new system, dubbed Sentinel, is replacing the Virtual Case File project. That's the one the FBI officially spiked in March, after \$170 million and four years of slipped schedules — and a mere three months after it became clear that Virtual Case File wasn't going to do what the bureau needed.

Truth to tell, when Mueller announced the end of Virtual Case File, I hoped for the best and expected the worst. Killing a big IT project, especially a big government project, isn't easy.

In fact, the official position of Science Applications International Corp. (SAIC), the contractor on the old project, was that Mueller was wrong. Virtual Case File wasn't dead, the software was still being tested, and the FBI wouldn't be making any decisions on what to do next for three months or more.

I assumed that between politics and bureaucratic foot-dragging, that last estimate would be close to correct, even though SAIC was wrong about everything else.

Two months later, there's a new project with a workable schedule and a phased rollout. That's impressively fast.

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Each phase of system development will deliver stand-alone capabilities. And each phase will be fully funded before work starts, so the project won't be orphaned or strangled because of budget cuts over the next three to four years.

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Will Sentinel hit all its marks and go live starting at the end of 2006? Maybe; maybe not. At least now it has a chance.

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We still don't know how fast the FBI can move. But now at least we know why the FBI can move fast.

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FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

The Easy Way, the Hard Way

Engineer gets an e-mail from sales that contains a copy of a fax inquiry from a customer. Is there a way of telling from this message what the customer's fax number is, so I can reply that way? he asks IT pilot fish. "Naturally," says fish. "All I had to do was call the originating sales guy to get the fax number, and then pass it along to the engineer — who is now even more amazed at the technical genius of the IT department."

Um... No. There's a complete power failure at the building that houses

SHARK TANK

ly anonsens. You there, now what?"

Downside

Human resources director wants to push the employees around as the company intranet, and IT pilot fish is tasked with making it happen. Then fish gets an idea. He puts the e-mail on a hard CD and suggests that, along with the intranet version, a CD copy could also be handed out to any employee who wants one. He-phased HR director doesn't see the advantage: "That to see the CD, the employee would need a computer."

Now What?

Fish tank calls in to the vendor's support office needing some information and a file from the server. "Our new feature takes the call as an e-mail," reports a pilot fish on the scene. "I overheard the tech out for the file. The feature doesn't know where the file is, so the tech is going to walk her to it. First, go to my Computer," he says. The feature says, "OK, just a minute," and places him on hold. She then walks over to his computer, picks up the extension and pro-

Still a Few Bugs in the System

This feature has just opened a new history book area, and the customer proudly tells customer pilot fish about this new computer system on his laptop. "The said that it said the order right downstairs in the kitchen, where they would prepare our meal and send it to," fish says. "After selecting our order from the computer screen, he looked over the balcony and yelled, 'That's two Colons.' The software just said 'soft drink.'"

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FRANKLY SPEAKING • FRANK HAYES

FBI on the Move

HOW FAST CAN THE FBI MOVE? Last week, FBI Director Robert Mueller told a Senate subcommittee that the bureau is working on a new computer system that will let agents share information about cases they're working on, but the software won't go live for another year and a half (see story, page 45).

If that sounds slow, you haven't been paying attention.

This new system, dubbed Sentinel, is replacing the Virtual Case File project. That's the one the FBI officially spiked in March, after \$170 million and four years of slipped schedules — and a mere three

months after it became clear that Virtual Case File wasn't going to do what the bureau needed.

Truth to tell, when Mueller announced the end of Virtual Case File, I hoped for the best and expected the worst. Killing a big IT project, especially a big government project, isn't easy.

In fact, the official position of Science Applications International Corp. (SAIC), the contractor on the old project, was that Mueller was wrong, Virtual Case File wasn't dead, the software was still being tested, and the FBI wouldn't be making any decisions on what to do next for three months or more.

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